DVD Micro System

MCD728

all versions

Service
Service
Service

Service Manual

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CLASS 1
LASER PRODUCT

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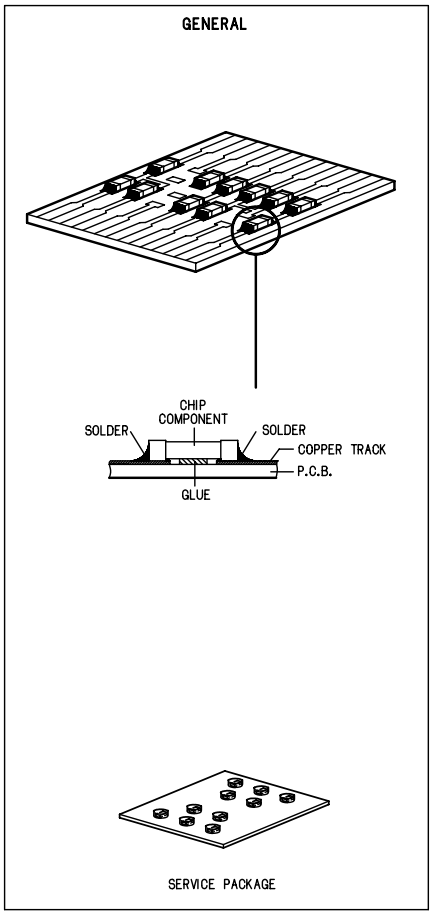
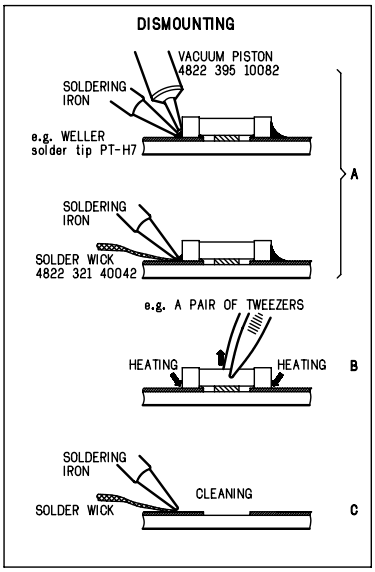
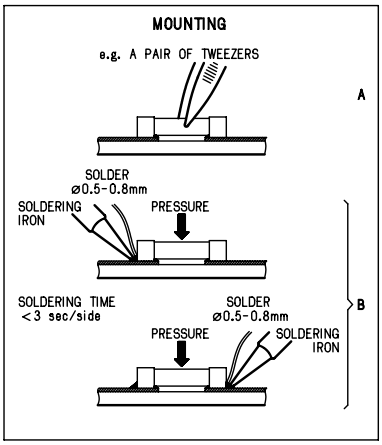
Version 1.2

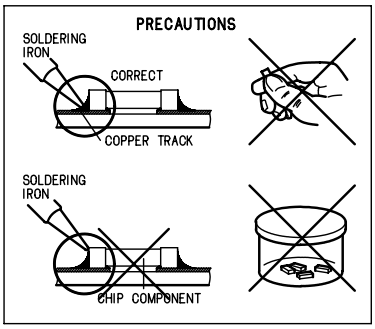
PHILIPS

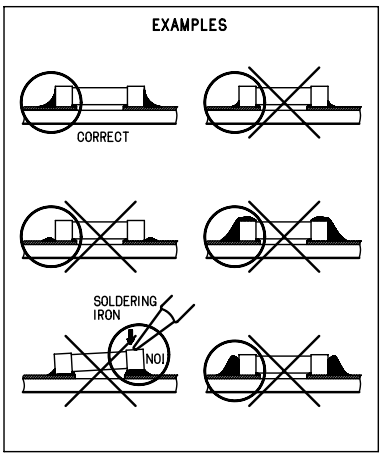
HANDLING CHIP COMPONENTS











(GB) WARNING
All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wristband with resistance. Keep components and tools at this potential.

ESD

(NL) WAARSCHUWING
Alle IC´s en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen vermindern. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION
Tous les IC et beaucoup d´autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévite pourrait être considérablement écourtée par le fait qu´aucune précaution nést prise à leur manipulation.
Lors de réparations, s´assurer de bien être relié au même potentiel que la masse de l´appareil et enfileer le bracelet serti d´une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l´on utilise soient également à ce potentiel.

(D) WARNUNG
Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
Sorgen Sie dafür, daß Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO
Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparationi occorre quindi essere collegato allo stesso potenziale che quello della massa delápparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

SAFETY

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.
Safety components are marked by the symbol ⚠

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

(F)
Les normes de sécurité exigent que l`appareil soit remis à l`état d`origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.
Les composants de sécurité sont marqués ⚠

(I)
Le norme di sicurezza estigono che l´apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.
Componenty di sicurezza sono marcati con ⚠

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

CLASS 1 LASER PRODUCT

(GB) **DANGER**: Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

(S) Varning !
Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !
Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(FIN) Varoitus !
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen !

(GB)
After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
The leakage current must not exceed 0.5mA.

(F)
"Pour votre sécurite, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

INFORMATION ABOUT LEAD-FREE SOLDERING

Philips CE is producing lead-free sets from 1.1.2005 onwards.
IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from 1 Jan 2005 onwards, according next rules:

Example S/N:

Bottom line of typeplate gives a 14-digit S/N. Digit 5&6 is the year, digit 7&8 is the week number, so in this case 2005 wk12

So from 0501 onwards = from 1 Jan 2005 onwards

Important note: In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (leaded/lead -free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.

- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
  If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.
  Do not re-use BGAs at all.

- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.

- On our website **www.atyourservice.ce.Philips.com** you find more information to:

  * BGA-de-/soldering (+ baking instructions)
  * Heating-profiles of BGAs and other ICs used in Philips-sets

  You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

SERVICE INSTRUCTION

Safety regulations require that after a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):

1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.

- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

TECHNICAL SPECIFICATIONS

SYSTEM

Total output power 400W
Power supply ..... 220 – 240 V / 50 Hz
Rated working power consumption (1/8 rated output power) ..... ≤ 85W
AUX input sensitivity ..... ≤ 500mV
Channel Separation ..... ≥ 40dB
Distortion 0.7%
Eco power Standby ..... < 1W

DVD

Frequency response 100Hz-20kHz (+0.5/-2 dB)
Video output ..... 1 V_{P-P}
HDMI 480p (60Hz), 720p (60Hz), 1080i (60Hz), 576p (50Hz), 720p (50Hz), 1080i (50Hz)
Horizontal definition ..... 500 (TV)
Dimensions .....
..... 232 (W) x 75.5 (H) x 223.5 (D) mm
Weight ..... 2.3 kg

AMPLIFIER

Rated output power (THD = 10%) .....
..... 2x75W (4Ω) + 150W (8Ω)
Frequency response 100Hz-20kHz (+0.5/-2 dB)
S/N Ratio ..... ≥ 60dB
Loaded impedance ..... 4 Ω
Dimensions .....
..... 232 (W) x 75.5 (H) x 223.5 (D) mm
Weight ..... 4.35 kg

TUNER

FM Frequency range ..... 87.5-108 MHz
FM Noise limit sensitivity ..... ≤ 20μV/M
FM S/N ..... ≥ 46dB

SPEAKER

Front Speakers

Impedance ..... 4 Ω
Input power 75W
Sensitivity ..... 80 ± 4dB
Frequency response 80Hz-16kHz
Dimensions . 150 (W) x 323 (H) x 150 (D) mm
Weight ..... 2.4 kg each

Subwoofer

Subwoofer (not magnetically shielded design) .....
..... 6.5''
Impedance ..... 8 Ω
Input power 150W
Dimensions (w x h x d) .....
..... 430 mm x 262 mm x 292 mm
Weight ..... 4.4 kg

REMOTE

Distance 6m
Angle ..... ± 30^0

SERVICE TOOLS

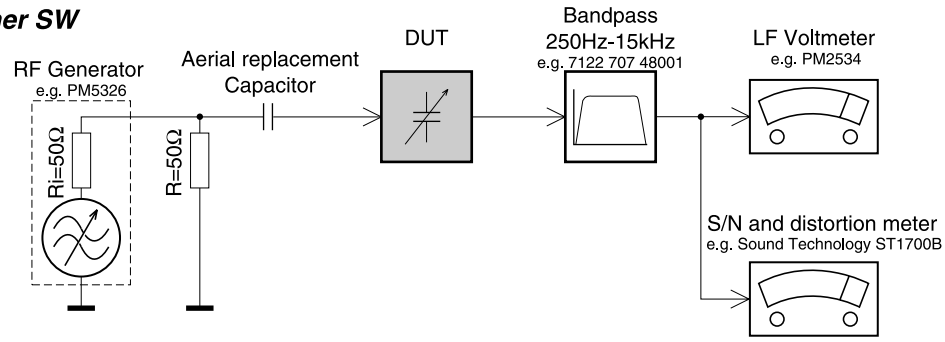
Audio signal disc SBC 429 ..... 4822 397 30184
Playability test disc SBC 444 ..... 4822 397 30245
Test disc 5 (disc without errors) +
Test disc 5A (disc with dropout errors, black spots and fingerprints)
SBC 426/426A 4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without “pause”) 4822 397 30155

AVAILABLE ESD PROTECTION EQUIPMENT

anti-static table mat	large 1200x650x1.25mm	4822 466 10953
	small 600x650x1.25m	4822 466 10958
anti-static wristband		4822 395 10223
connection box (3 press stud connections, 1MΩ)		4822 320 11307
extendible cable (2m, 2MΩ, to connect wristband to connection box)		4822 320 11305
connecting cable (3m, 2MΩ, to connect table mat to connection box)		4822 320 11306
earth cable (1MΩ, to connect any product to mat or to connection box)		4822 320 11308
KIT ESD3 (combining all 6 prior products - small table mat)		4822 310 10671
wristband tester		4822 344 13999

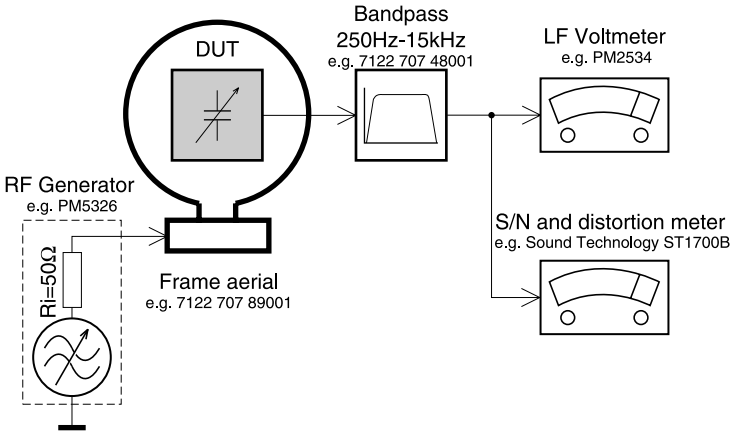
SERVICE MEASUREMENT

Tuner SW



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

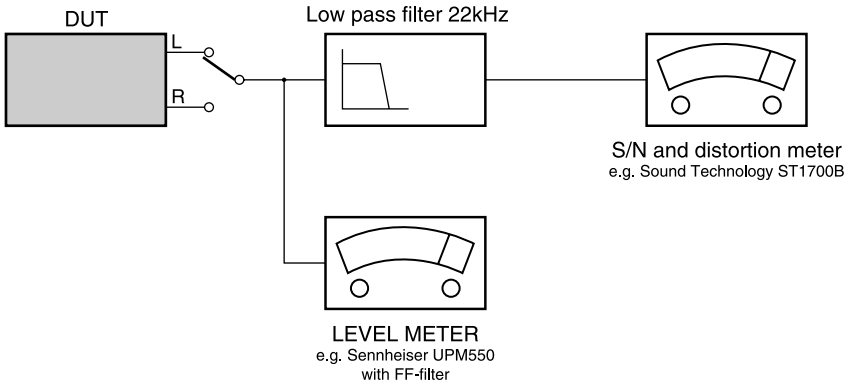
Tuner AM (MW,LW)

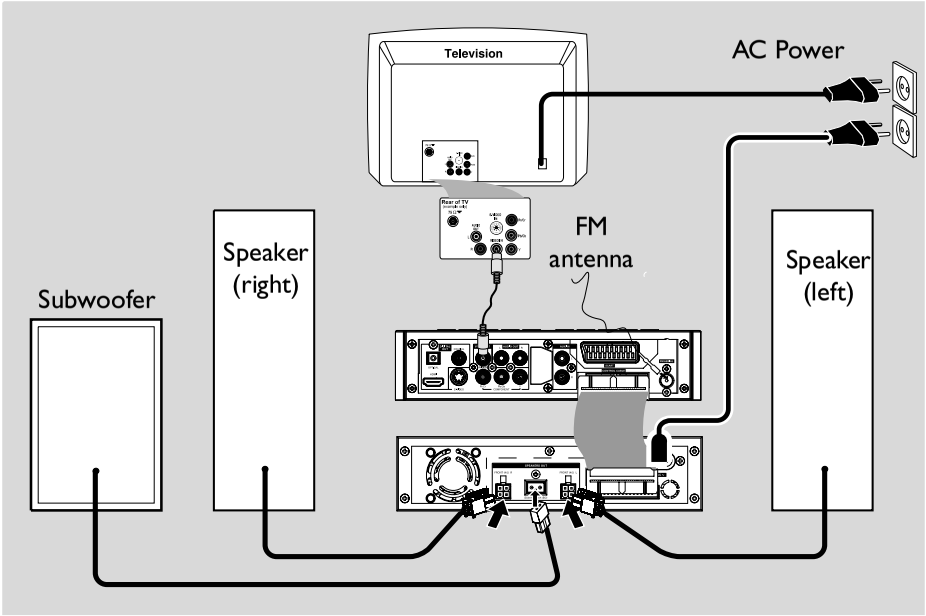


To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.

CD

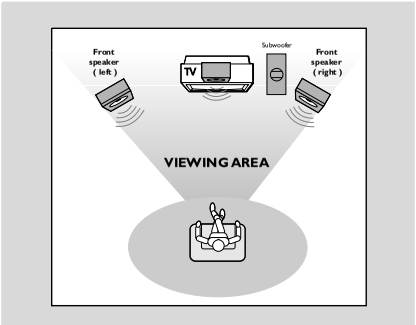
Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)
L.P.F. = 13 th order filter 4822 395 30204





IMPORTANT!
– The type plate is located at the bottom of the system.
– Before connecting the AC power cord to the wall outlet, ensure that all other connections have been made.
– Never make or change any connections with the power switched on.

Step 1: Placing the speakers and subwoofer



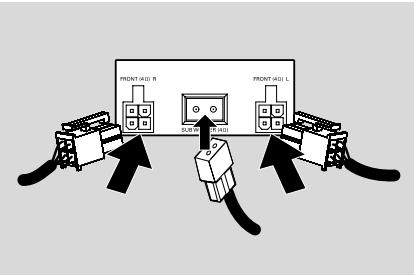
1. Place the front left and right speakers at equal distances from the TV set and at an angle of approximately 45 degrees from the listening position.
2. Place the subwoofer on the floor near the TV.

Notes:
– To avoid magnetic interference, do not position the front speakers too close to your TV set.
– Allow adequate ventilation around the DVD System.

Connections

Step 2: Connecting speakers

1. Connect the speaker wires to the SPEAKERS terminals, right speaker to **FRONT (4Ω) R** and left speaker to **FRONT (4Ω) L**. Fully insert the connectors on the cables into the terminals and fasten the hooks to ensure firm connection.



2. Connect the passive subwoofer to the **SUBWOOFER (8Ω)** terminal with the supplied subwoofer cable by matching the plug types.

Notes:
– Ensure that the speaker cables are correctly connected. Improper connections may damage the system due to short-circuit.
– For optimal sound performance, use the supplied speakers.
– Do not connect more than one speaker to any one pair of +/- speaker jacks.
– Do not connect speakers with an impedance lower than the speakers supplied. Please refer to the SPECIFICATIONS section of this manual.

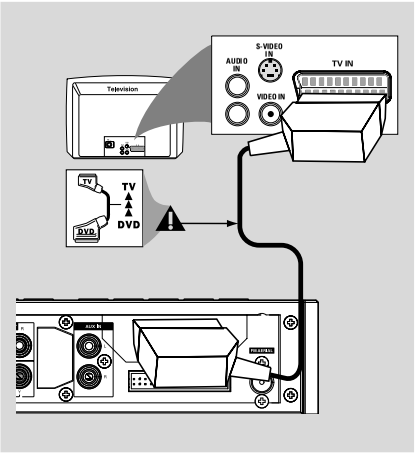
Step 3: Connecting the control cable

- Connect the serial port marked "CONTROL CABLE" at the rear of the DVD player to the same port at the rear of the power amplifier with the supplied flat control cable.

Step 4: Connecting TV

IMPORTANT!
– You only need to make one video connection from the following options, depending on the capabilities of your TV.
– Connect the DVD system directly to the TV.
– A SCART connection allows you to use features both Audio and Video features on the DVD Player.

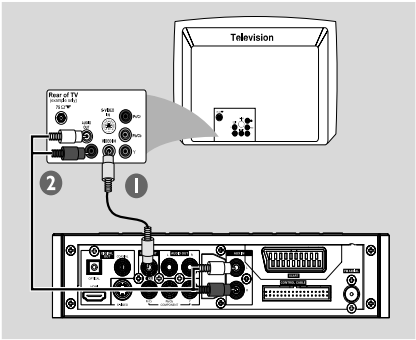
Using SCART jack



- Use the SCART cable (black) to connect the DVD Player's **SCART** jack to the corresponding Scart input jacks on the TV *(cable not supplied)*.

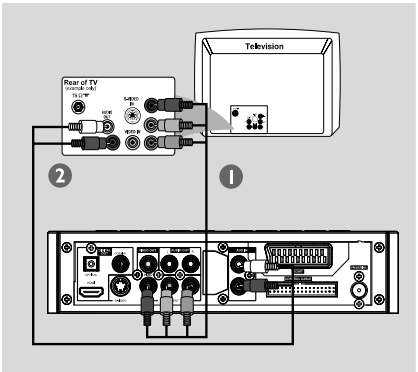
Note:
– Ensure that the "TV" indication on SCART cable is connected to the TV set and "DVD" indication on SCART cable is connected to the DVD Player.

Using Composite Video jack



1. Use the composite video cable (yellow) to connect the system's **VIDEO** jack to the video input jack (or labelled as A/V In, Video In, Composite or Baseband) on the TV set.
2. To listen to the TV channels through this DVD system, use the audio cables (white/red-not supplied) to connect **AUX IN L/R** jacks to the corresponding AUDIO OUT jacks on the TV.

IMPORTANT!
– The progressive scan video quality is only possible when using Y Pb Pr, and a progressive scan TV is required.



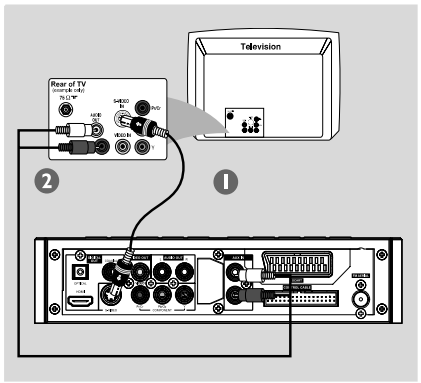
1. Use component video cables (red/blue/green - not supplied) to connect the DVD system's **COMPONENT (Pr/Cr Pb/Cb Y)** jacks to the corresponding Component video input jacks (or labeled as Y Pb/Cb Pr/Cr or YUV) on the TV.
2. To listen to the TV channels through this DVD system, use the audio cables (white/red-not supplied) to connect **AUX IN L/R** jacks to the corresponding AUDIO OUT jacks on the TV.
3. If you are using a Progressive Scan TV (TV must indicate Progressive Scan or ProScan capability), to activate TV Progressive Scan, please refer to your TV user manual. For DVD system Progressive Scan function, see "Getting Started-Setting up Progressive Scan feature".

Note:
– If your TV does not support Progressive Scan, you will not be able to view the picture.
Press SYSTEM MENU on the remote to exit the system menu and then DISC and "1" to exit progressive scan.

Connections

Using S-Video jack

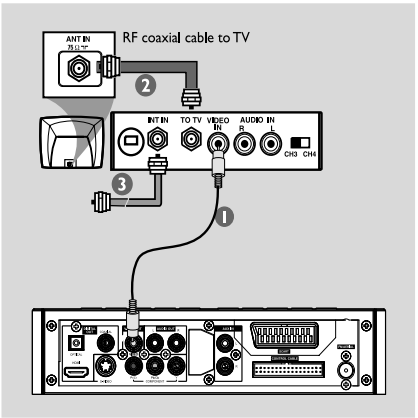
IMPORTANT!
– If S-Video is used for DVD playback connection, the system's VIDEO OUT setting will need to be changed accordingly.



1. Use an S-Video cable (not supplied) to connect the DVD system's **S-VIDEO** jack to the S-Video input jack (or labeled as Y/C or S-VHS) on the TV.
2. To listen to the TV channels through this DVD system, use the audio cables (white/red-not supplied) to connect **AUX IN L/R** jacks to the corresponding AUDIO OUT jacks on the TV.

Using an accessory RF modulator

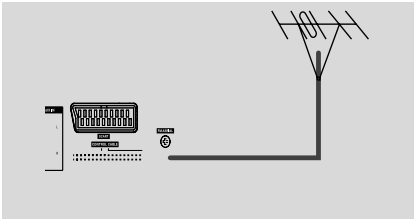
IMPORTANT!
– If your TV only has a single Antenna In jack (labeled as 75 ohm or RF In), you will need an RF modulator in order to view DVD playback on the TV. See your electronics retailer or contact Philips for details on RF modulator availability and operations.



1. Use the composite video cable (yellow) to connect the DVD system's **VIDEO** jack to the video input jack on the RF modulator.
2. Use an RF coaxial cable (not supplied) to connect ANTENNA OUT or TO TV jack on the RF modulator to the Antenna IN jack on the TV.
3. Connect the Antenna or Cable TV service signal to the ANTENNA IN or RF IN jack on the RF modulator. (It may have been connected to your TV previously. Disconnect it from the TV.)

Step 5: Connecting FM antenna

Connect the supplied FM antenna to the FM (75 Ω) jack. Extend the FM antenna and fix its end to the wall.
For better FM stereo reception, connect an external FM antenna (not supplied).



Note:
– Adjust the position of the antennas for optimal reception.
– Position the antennas as far as possible from your TV, VCR or other radiation source to prevent unwanted interference.

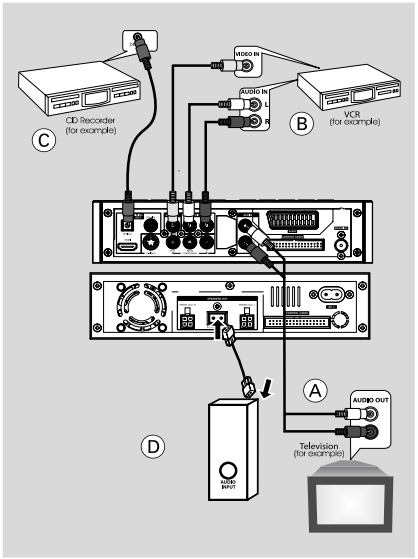
Step 6: Connecting the power cord

After everything is connected properly, plug in the AC power cord to the power outlet.

Never make or change any connection with the power switched on.

Additional: Connecting additional equipment

IMPORTANT!
– Some discs are copy-protected. You cannot record the disc through a VCR or digital recording device.
– When making connections, make sure the colour of cables matches the colour of jacks.
– Always refer to the owner's manual of the other equipment for complete connection and usage details.



Viewing and listening to the playback of other equipment Ⓐ

- Connect the system's **AUX IN L/R** jacks to the AUDIO OUT jacks on the other audio/visual device (such as a TV, VCR, Laser Disc player or cassette deck).
  Before starting operation, press **SOURCE** on the front panel to select AUX or press **AUX** on the remote in order to activate the input source.

Using the VCR for recording DVDs Ⓑ

- Connect one of the system's **VIDEO** jack to the corresponding VIDEO IN jack and **AUDIO OUT L/R** jacks to the AUDIO IN jacks on the VCR. This will allow you to make analogue stereo (two channel, right and left) recordings.

Recording (digital) Ⓒ

- Connect the system's **COAXIAL** or **OPTICAL** jack to the DIGITAL IN jack on a digital recording device.
  Before starting operation, set the DIGITAL OUT according to the audio connection. (See "DIGITAL OUT".)

Connecting an active subwoofer Ⓓ

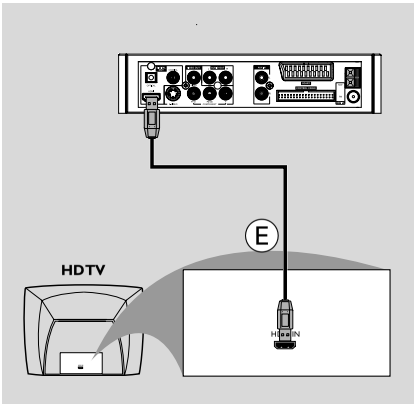
- Connect the DVD micro system's **SUBWOOFER** jack to the AUDIO INPUT jack on an active subwoofer (not supplied).

Connecting to a TV with HDMI Jack Ⓔ

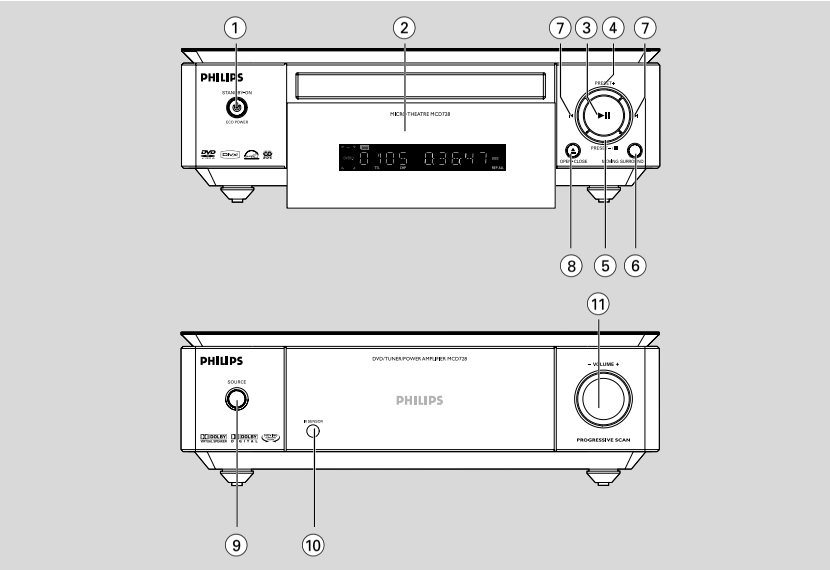
HDMI connects untouched and uncompressed digital transmission for the highest and crispest sound/image quality.

It has plug and play capability using only one cable for both audio/video output.

- Use a HDMI cable (not supplied) to connect the **HDMI** jack on the DVD Player to **HDMI IN** on a HDMI compatible device (e.g.; TV, Projector, Adaptor).
  ➜ It may take a while for the DVD player and input device to communicate and initialise.
  ➜ Playback starts automatically.



Notes:
– Proceed to "Setup Menu Options" ➜ "VIDEO SETUP PAGE" ➜ "HDMI SETUP" for detailed HDMI setup.
– If you are using the HDMI as audio source make sure that "DIGITAL OUTPUT" is set to "PCM only" (see "Setup Menu Options" ➜ "AUDIO SETUP PAGE" ➜ "DIGITAL AUDIO SETUP").
– To stop sound output from your TV after making the HDMI connection, make sure that "DIGITAL OUTPUT" is set to "SPDIF OFF" (see "Setup Menu Options" ➜ "AUDIO SETUP PAGE" ➜ "DIGITAL AUDIO SETUP").



DVD player and power amplifier

① **ECO POWER/STANDBY-ON** ⏻
– switches on the system or puts it on to Eco power/normal standby mode.

② **Display**
– shows the current status of the DVD player.

③ **▶II**
– starts or interrupts disc playback.

④ **PRESET +**
– in tuner mode, selects a preset radio station forward.

⑤ **PRESET-/■**
– stops disc playback or erases a program.
– in tuner mode, selects a preset radio station backward.
– in Demo mode *(on the system only)*, activates/deactivates the demonstration.

⑥ **MOVING SURROUND**
– enables/disables the surround sound effect with moving speakers.

⑦ **I◀/▶I**

Disc:
– skips to the previous/next chapter/title/track.

Tuner:
– tunes to a higher/lower radio frequency.
– press and hold, then release the key to start automatic search for a radio frequency downward/upward.

⑧ **OPEN•CLOSE ⏏**
– opens or closes the disc tray.
– switches the system on.

⑨ **SOURCE**
– selects the respective sound source: DVD/AUX/TUNER.
– switches the system on.

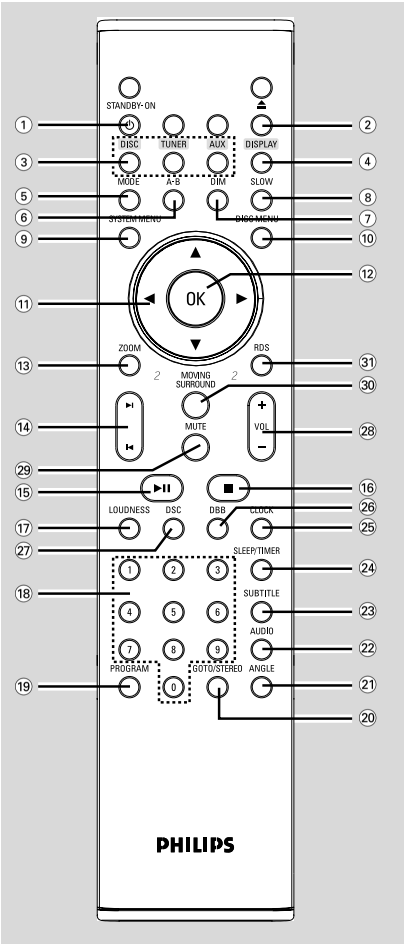
⑩ **IR SENSOR**
– point the remote control towards this sensor.

⑪ **VOLUME -/+**
– adjusts the volume upward/downward.
– adjusts the hours and minutes in clock/timer setting mode.
– switches the set timer ON or OFF.

Remote control

① **STANDBY** ⏻
– switches on the system or puts it on to Eco power/normal standby mode.

② ⏏
– opens or closes the disc compartment



③ **DISC/TUNER/AUX**
– selects the respective sound source for DVD/AUX/TUNER.
– exits P-SCAN (progressive scan). (Only for DISC)

④ **DISPLAY**
– displays information on TV screen during playback

⑤ **MODE**
–
mode for a disc.

⑥ **A-B**
– repeats playback of a specific section on a disc.

⑦ **DIM**
– selects different levels of brightness for the display screen.

⑧ **SLOW**
– selects different slow playback modes for a DivX/VCD/SVCD/DVD.

⑨ **SYSTEM MENU (disc mode only)**
– enters or exits the system menu.

⑩ **DISC MENU (disc mode only)**
– DVD/VCD: enters or exits the disc contents menu.
–
or off .
–

⑪ **▼ / ▲ / ▶ / ◀**
– selects an item in a menu.
– moves an enlarged picture up/down/left/right.
– (▶ / ◀; Tuner) tunes to a higher/lower radio frequency.
– (▶ / ◀; Tuner) press and hold, then release the key to start automatic search for a radio frequency downward/upward.
– (▶ / ◀; Disc) searches backward/forward in a disc at different speeds.

⑫ **OK**
– confirms a selection.

⑬ **ZOOM**
– DVD/VCD/Picture CD: enlarges or reduces a picture or active image on the TV screen.

⑭ **⏮ / ⏭**
– Disc: skips to the previous/next chapter/title/track
– Tuner: selects a preset radio station.

⑮ **▶II**
– starts or interrupts disc playback.

⑯ **■**
– stops disc playback or erases a program.

⑰ **LOUDNESS**
– enables or disables automatic loudness adjustment.

⑱ **Numeric Keypad (0-9)**
– inputs a track/title/chapter number of the disc.

⑲ **PROGRAM**
– DVD/VCD/CD: enters the program menu.
– MP3/WMA-CD: adds/deletes a programmed track to/from the program list.
– Tuner: programs preset radio stations.

⑳ **GOTO/STEREO**
– Disc: fast searches in a disc by entering a time, title, chapter or track.
– FM: sets stereo or mono sound mode.

㉑ **ANGLE**
– selects a DVD camera angle.

㉒ **AUDIO**

for VCD/DivX
– sets Stereo, Mono-Left or Mono-Right sound mode.

for DVD
– selects an audio language.

㉓ **SUBTITLE**
– selects a subtitle language.

㉔ **SLEEP/TIMER**

Standby mode
– sets time for switching on the system automatically.

Power-on mode
– sets the sleep timer function (auto off).

㉕ **CLOCK**

Standby mode
– sets the system clock.

Playback mode
– displays the system clock.

Eco power mode
– displays the system clock and switches to the standby mode.

㉖ **DBB**
– to select the desired DBB level (DBB 1, DBB 2 or DBB OFF).

㉗ **DSC**
– selects different types of preset sound equalizer settings (FLAT, POPS, JAZZ, CLASSIC or ROCK).

㉘ **VOLUME +/-**
– adjusts the volume upward/downward.
– adjusts the hours and minutes in clock/timer setting mode.
– switches the set timer ON or OFF.

㉙ **MUTE**
– disables or enables sound output.

㉚ **MOVING SURROUND**
– enables/disables the surround sound effect with moving speakers.

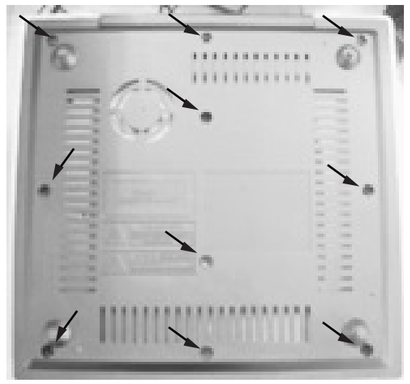
㉛ **RDS**
– for tuner, displays RDS information.

Notes for remote control:
– First, select the source you wish to control by pressing one of the source select keys on the remote control (DISC or TUNER, for example).
– Then select the desired function (▶II, ⏮, ⏭ for example).

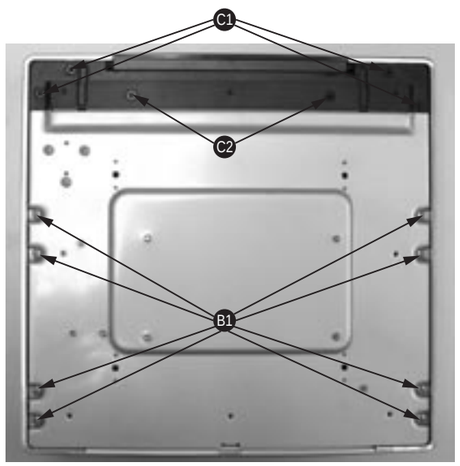
4 - 1

DISASSEMBLY DIAGRAM - DVD PART

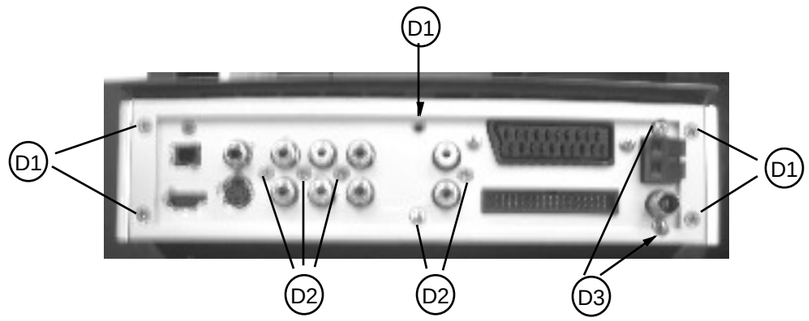
A.Remove Bottom Cover
A1.remove screws M2.5x4(10pcs)



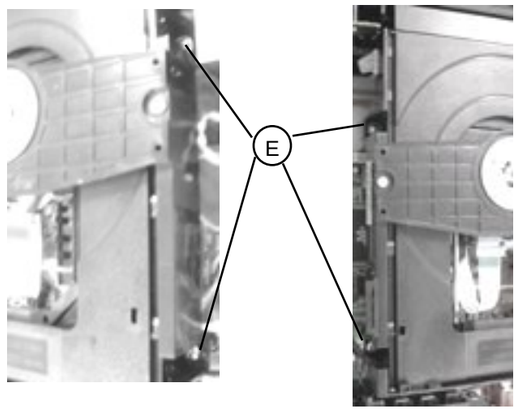
B*.remove screws M3x10(8pcs) and M3x8(3pcs)
C*.remove screws M3x8(4pcs) and T3x4(2pcs)



D.Remove Back Panel & Top cover
D*remove screws T3x4(5pcs)and T3x6(5pcs)and T3x10(2pc)

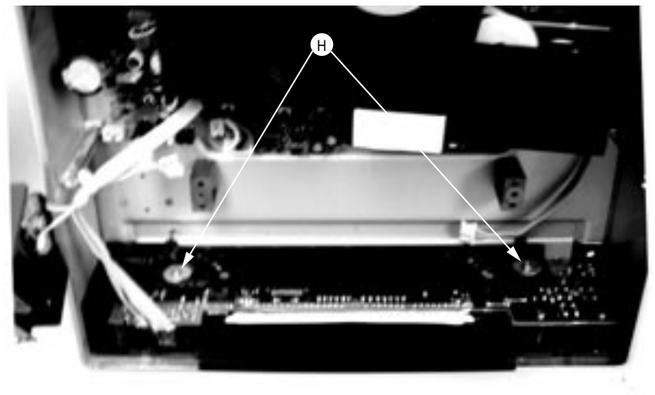


E. Remove DVD Rom

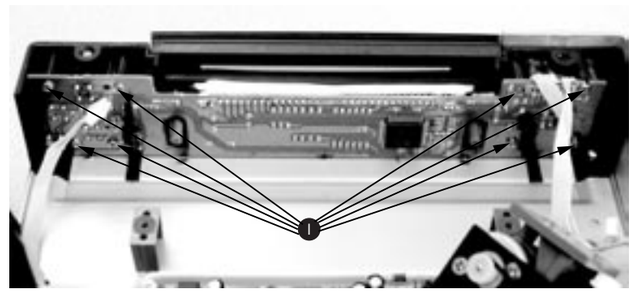


F. Remove MOTO cover

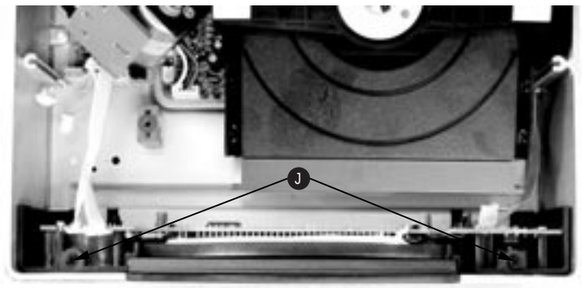
H.Remove Slid Plank



I.Remove VFD board assy



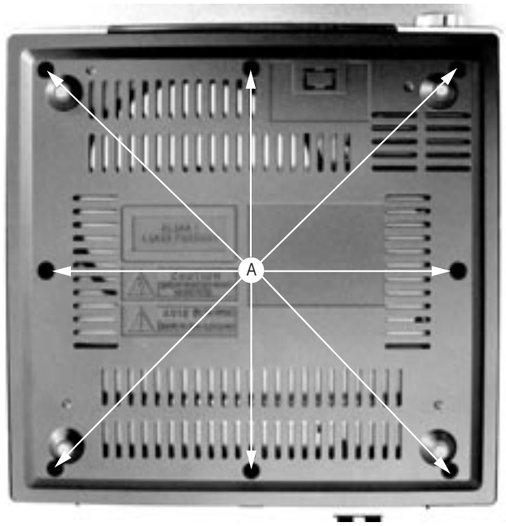
I.Remove Side metal Plate



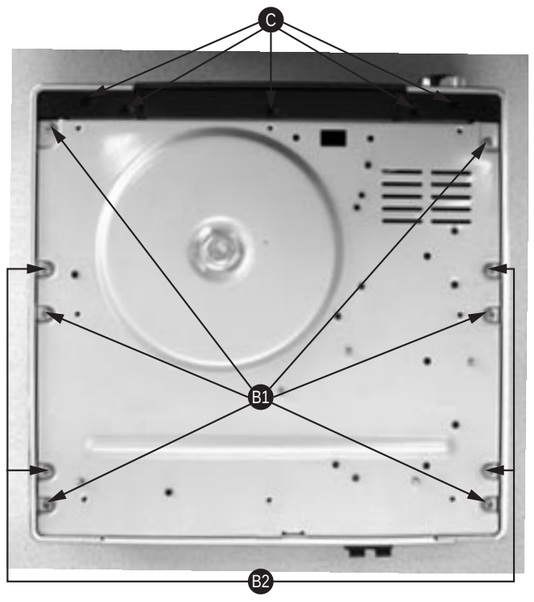
4 - 2

DISASSEMBLY DIAGRAM - AMP PART

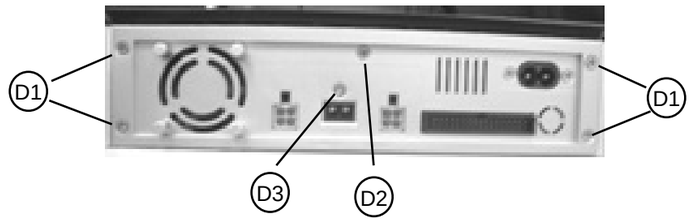
A.Remove Bottom Cover
A1.remove screws M2.5x4(8pcs)



B*.remove screws M3x10(6pcs) and T3x10(4pcs)
C*.remove screws T3x4(5pcs)

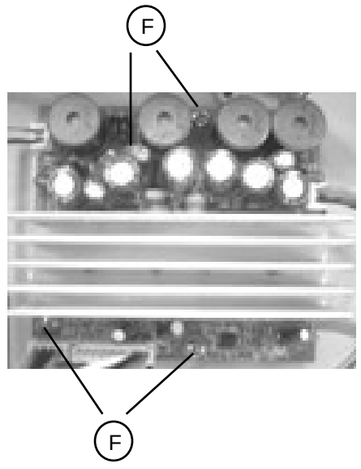


D.Remove Back Panel & Top Cover
D*remove screws T3x4(4pcs)and T3x6(1pcs)and T3x10(1pcs)

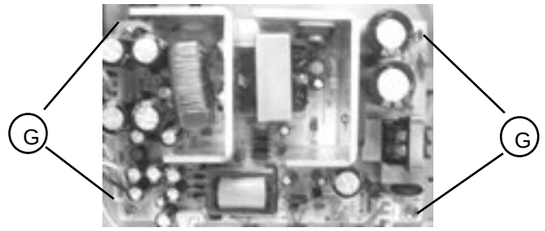


E. Remove Pre-AMP Board Assy

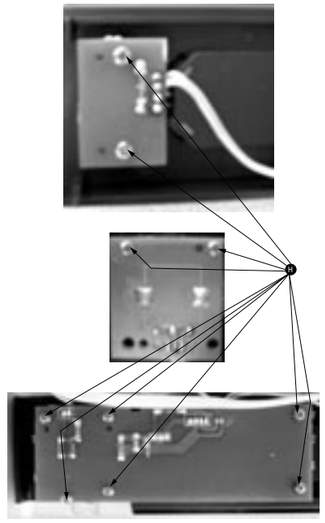
F. Remove AMP Board Assy



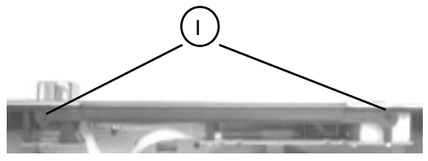
G.Remove SMPS board assy



H.Remove AMP Front board assy



I.Remove Side metal Plate



SOFTWARE VERSION AND UPGRADING

MCD728 Inspecting software version No.

1.Press SYSTEM keg to set to operating setup page, display is as below

--Common Setting Page --
TV Mode
Display Language
Screen Protection

2.Press the key of up、down、left、right to the original setup page

--Original Setting Page--
TV Set standard
Sound
Subtitle
Language Chosen by Disk
Age Controlling
Factory Setting

3.Enter the password “811502”, TV can display the model software date and area number

Ver. MCD728/××××
Date mmm dd yyyy
Time hh: mm: ss
Region code ×

CPU VERSION CHECK

1.keep PLAY/PAUSE and STOP buttons(on the set)while plug in the power cord, Tv screen shows

MCD728V××

MPEG VERSION CHECK

1. **Downloading the firmware for Philips support website http://www.philips.com/support**
2. **Prepare as uploading CD.**
3. **Load the CD in the CD Tray.**
4. **TV Screen shows**

Aptitude remove

Upgrade?
Start by pressing PLAY
Upgrading
File copying

5 - 1

Upgrade software

1.Installing the upgrade disk, DVD player can be upgraded automatically, which display as follow:

Upgrade file detected
Upgrade?
Press PLAY to start
Upgrading

Make the playback setting after the DVD motorized door opening automatically and showing OK to upgrade.

2. Pressing the SYSTEM can be set to the general setting page, which displays as follow:

--General setup page--
TV Display
OSD language
Screen saver

3. Pressing the key of left, right, up and down can be set to the original setting page, which display as follow:

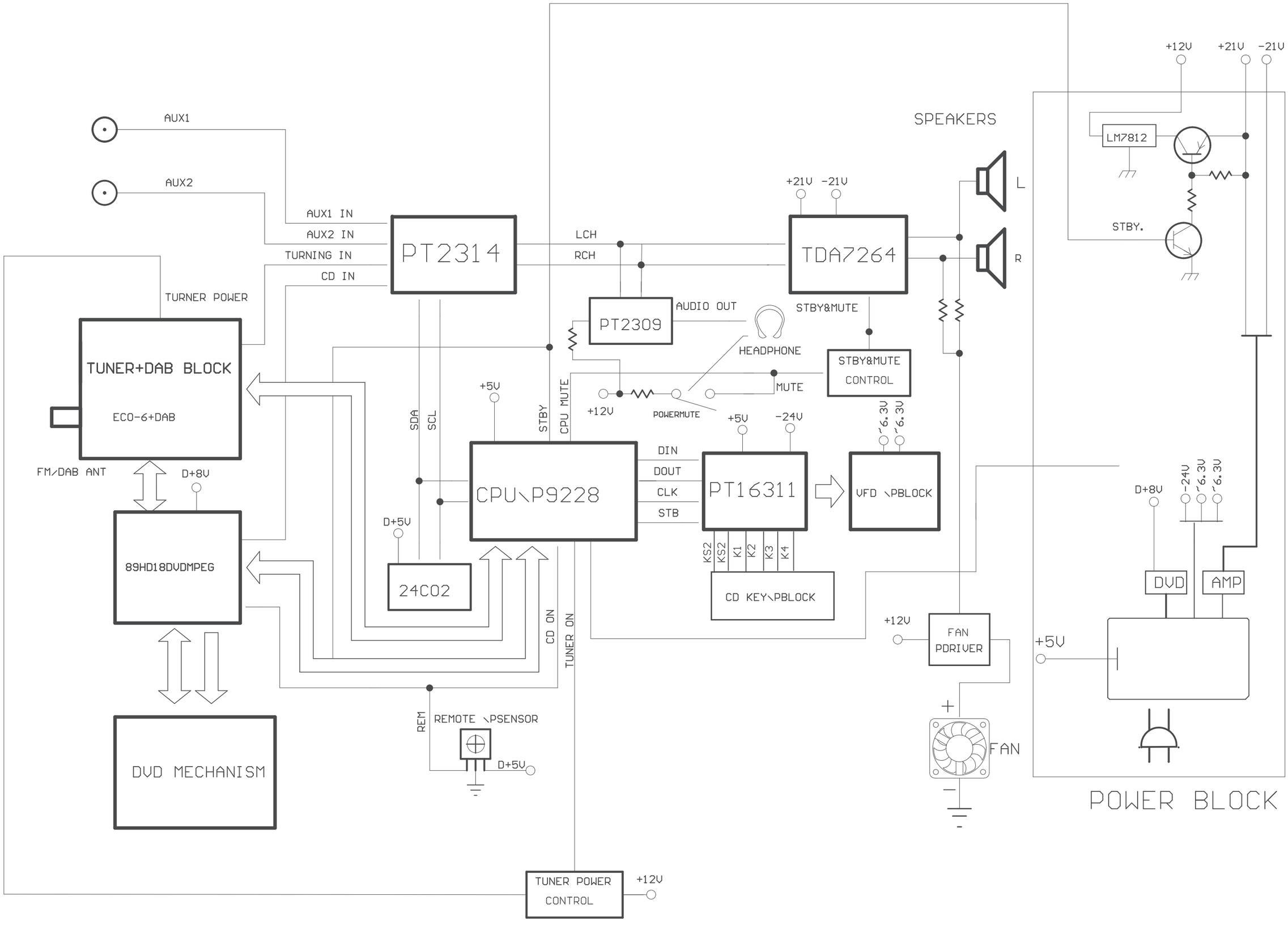
--Preference page--
TV type
Audio
Subtitle
Disc menu
Parental
Default

4. Pressing the key of left, right, up and down to move to the “Playback” and then pressing OK to confirm which means OK to upgrade the “Playback”.

--Preference page--
TV type
Audio
Subtitle
Disc menu
Parental
Reset

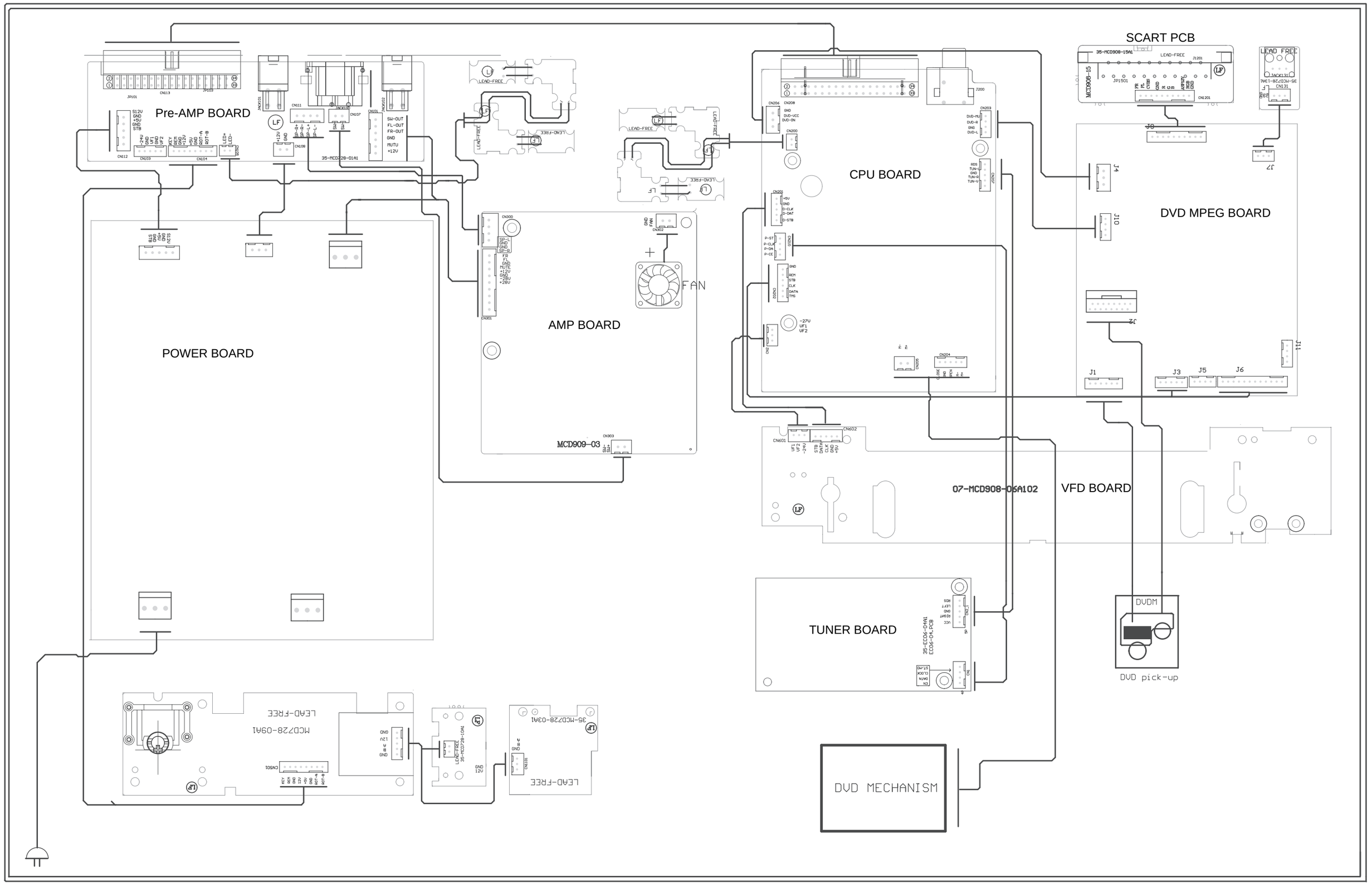
5 - 2

SET BLOCK DIAGRAM



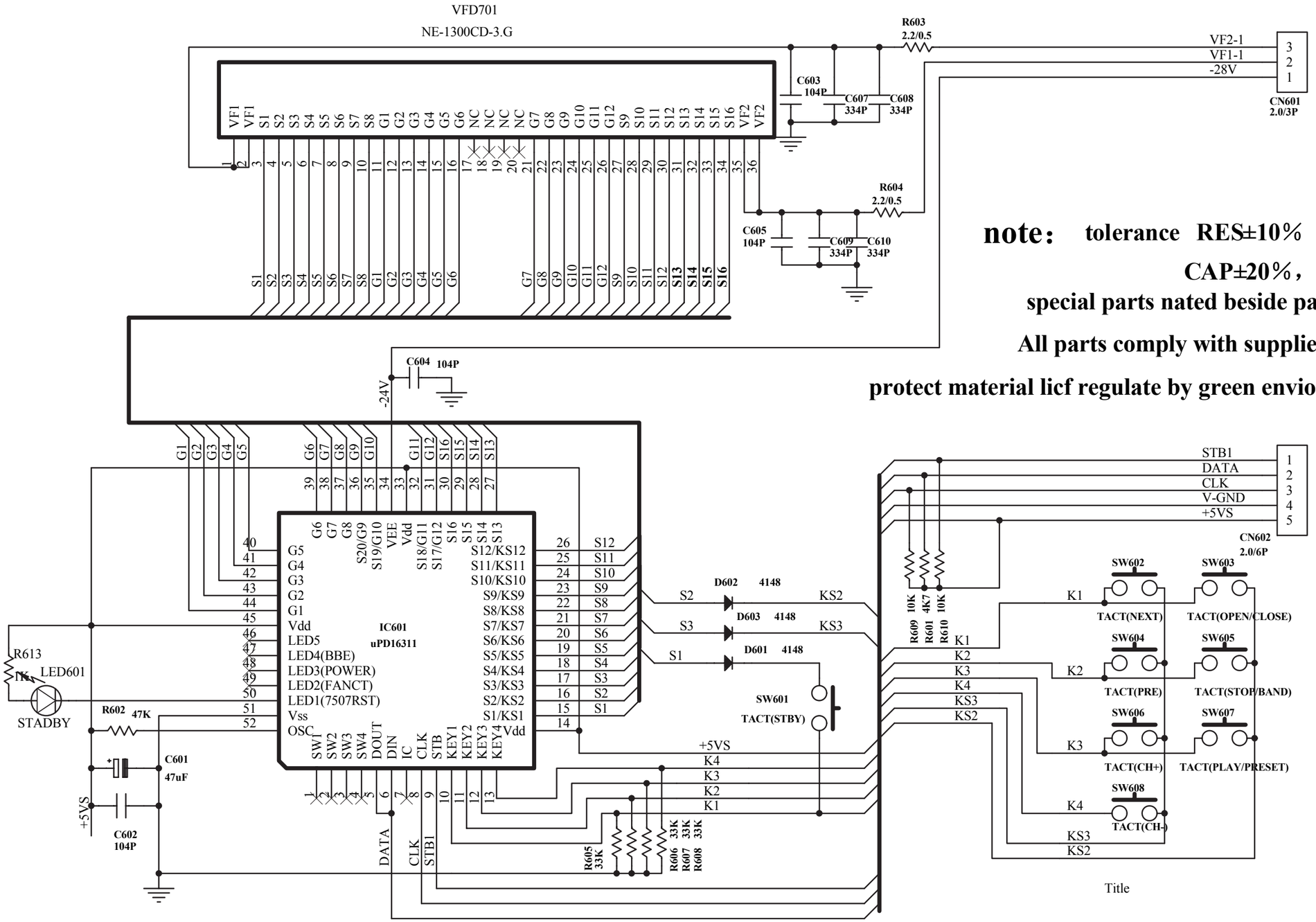
5 - 3

SET WIRING DIAGRAM



6 - 1

CIRCUIT DIAGRAM - VFD BOARD



note: tolerance RES±10%

CAP±20%,

special parts nated beside parts

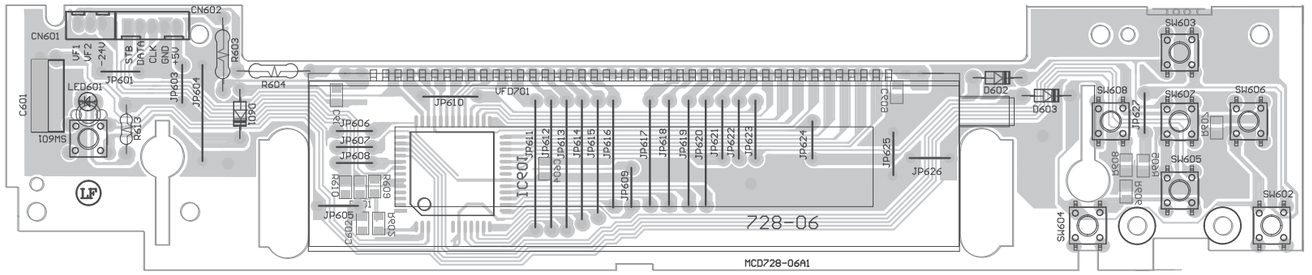
All parts comply with suppliey environment

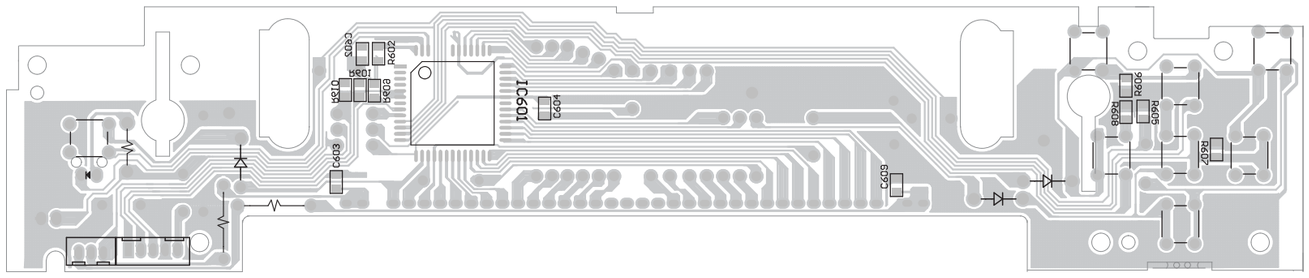
protect material licf regulate by green envionment management

Title

6 - 2

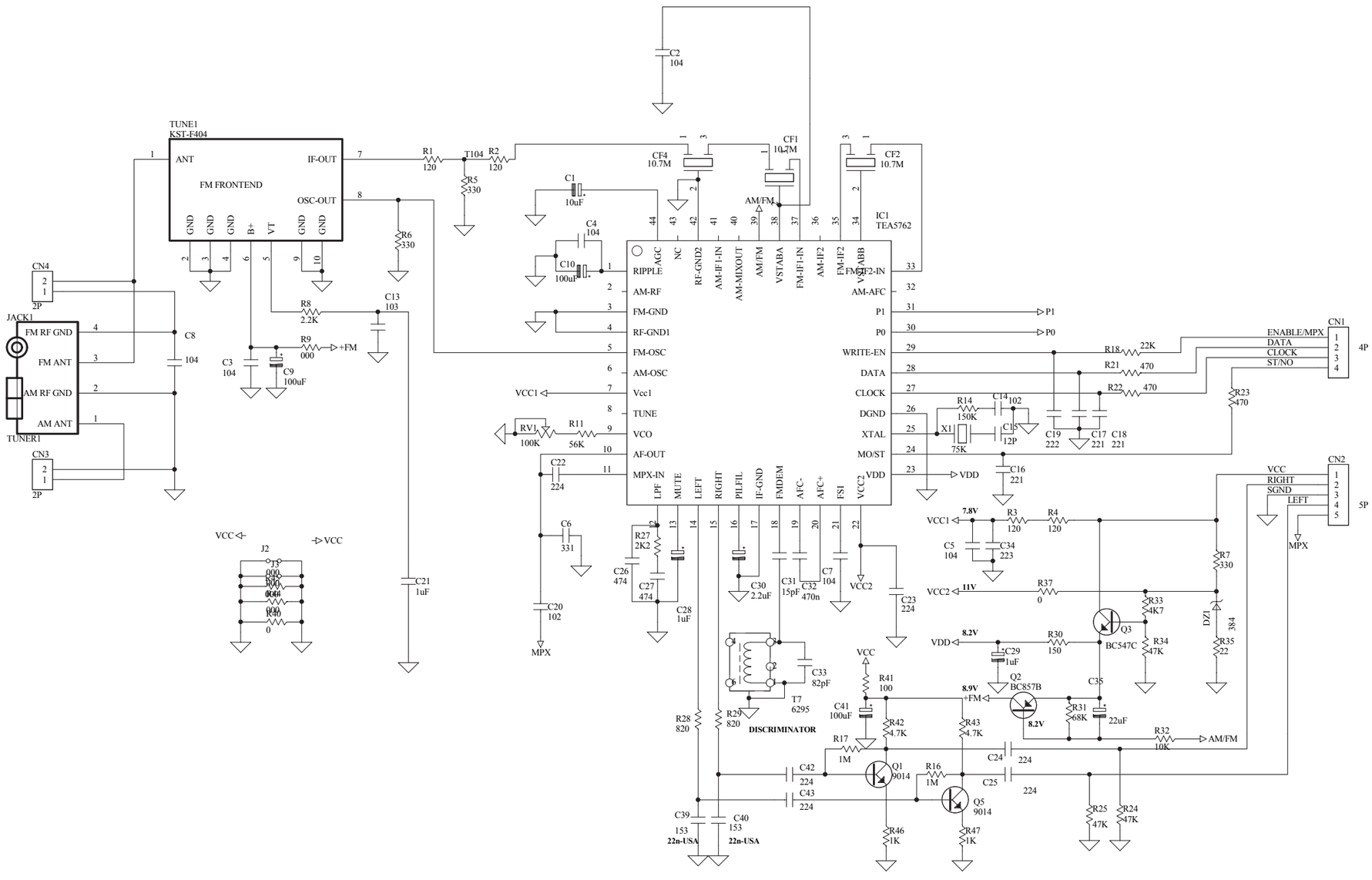
LAYOUT DIAGRAM - VFD BOARD





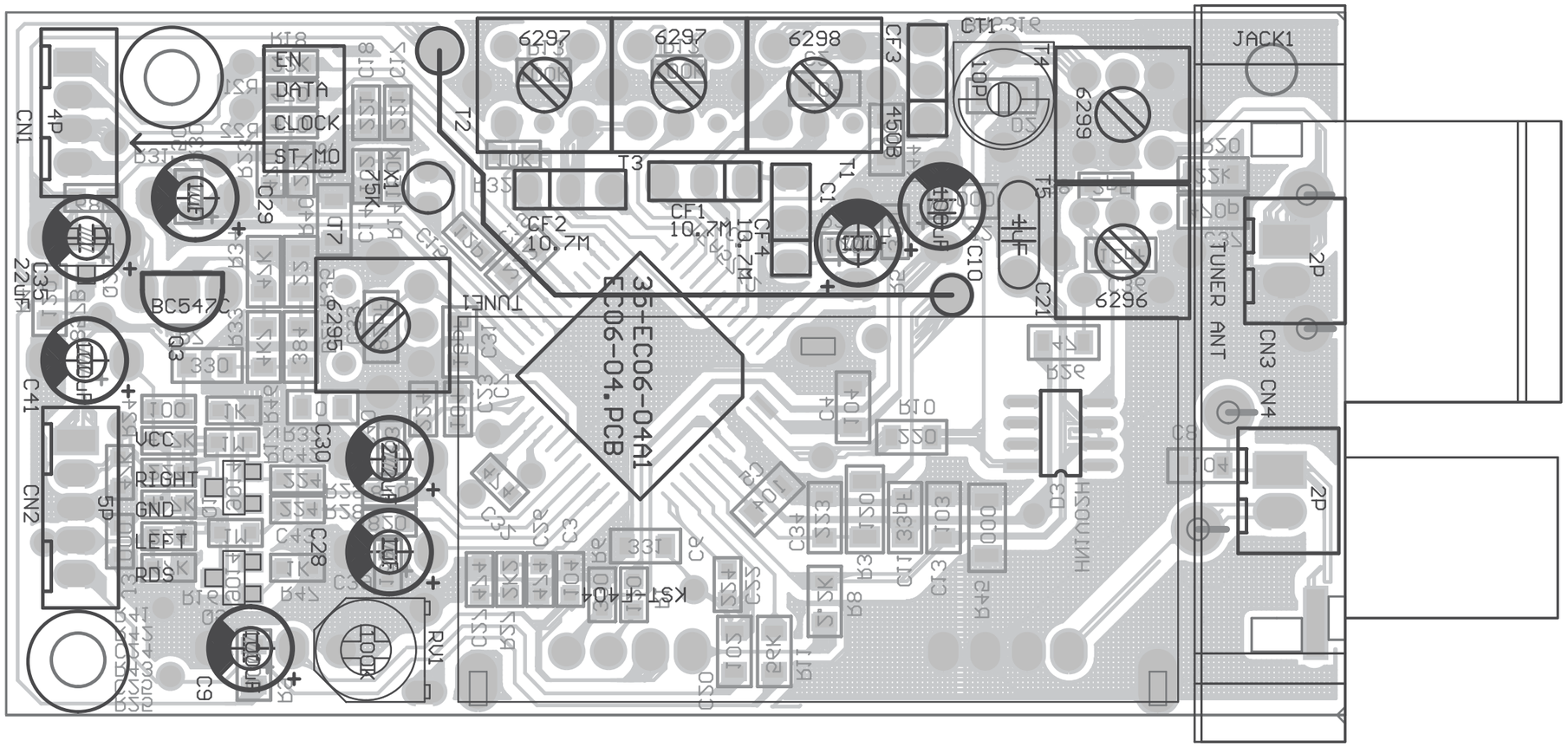
7 - 1

CIRCUIT DIAGRAM - TUNER BOARD



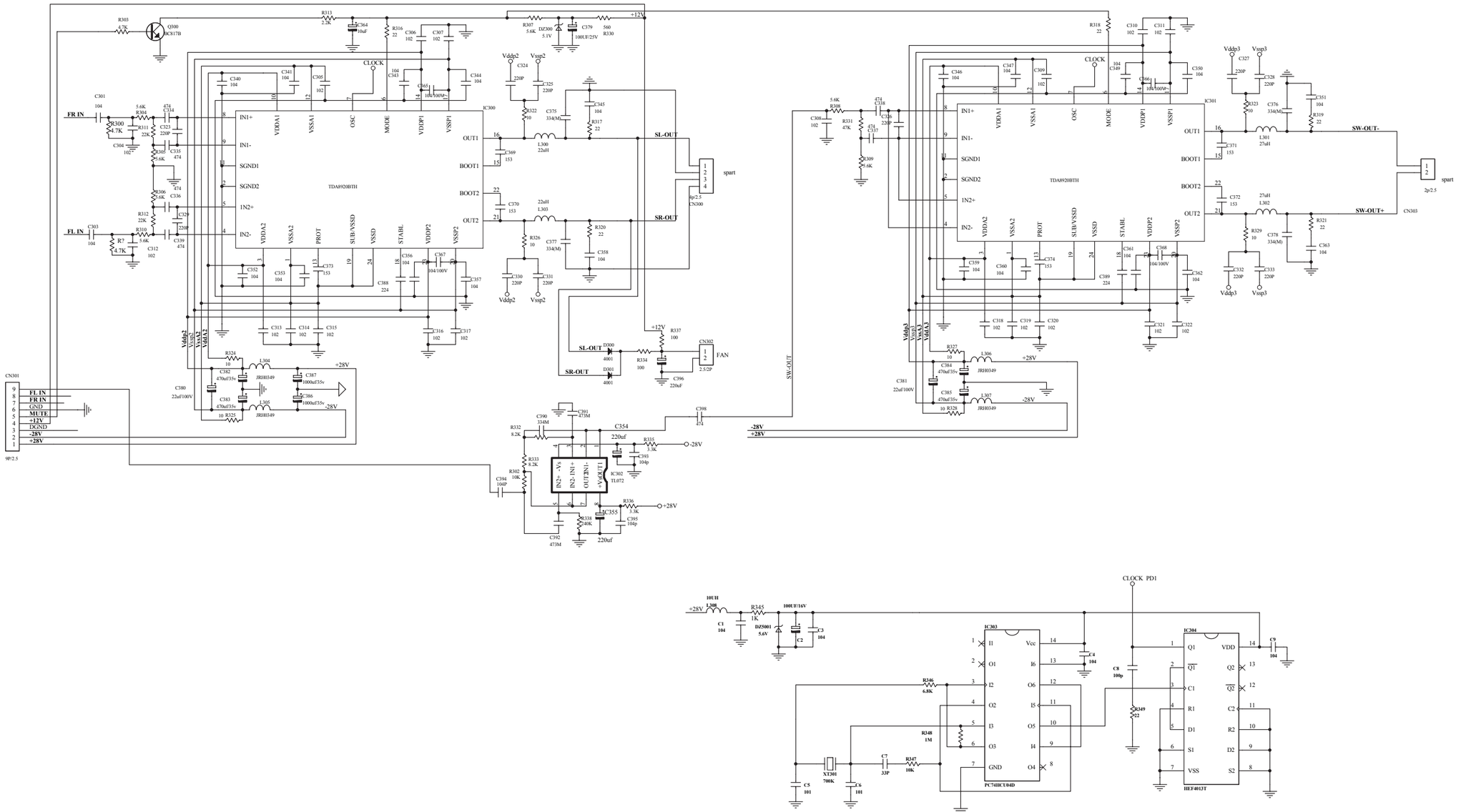
7 - 2

LAYOUT DIAGRAM - TUNER BOARD



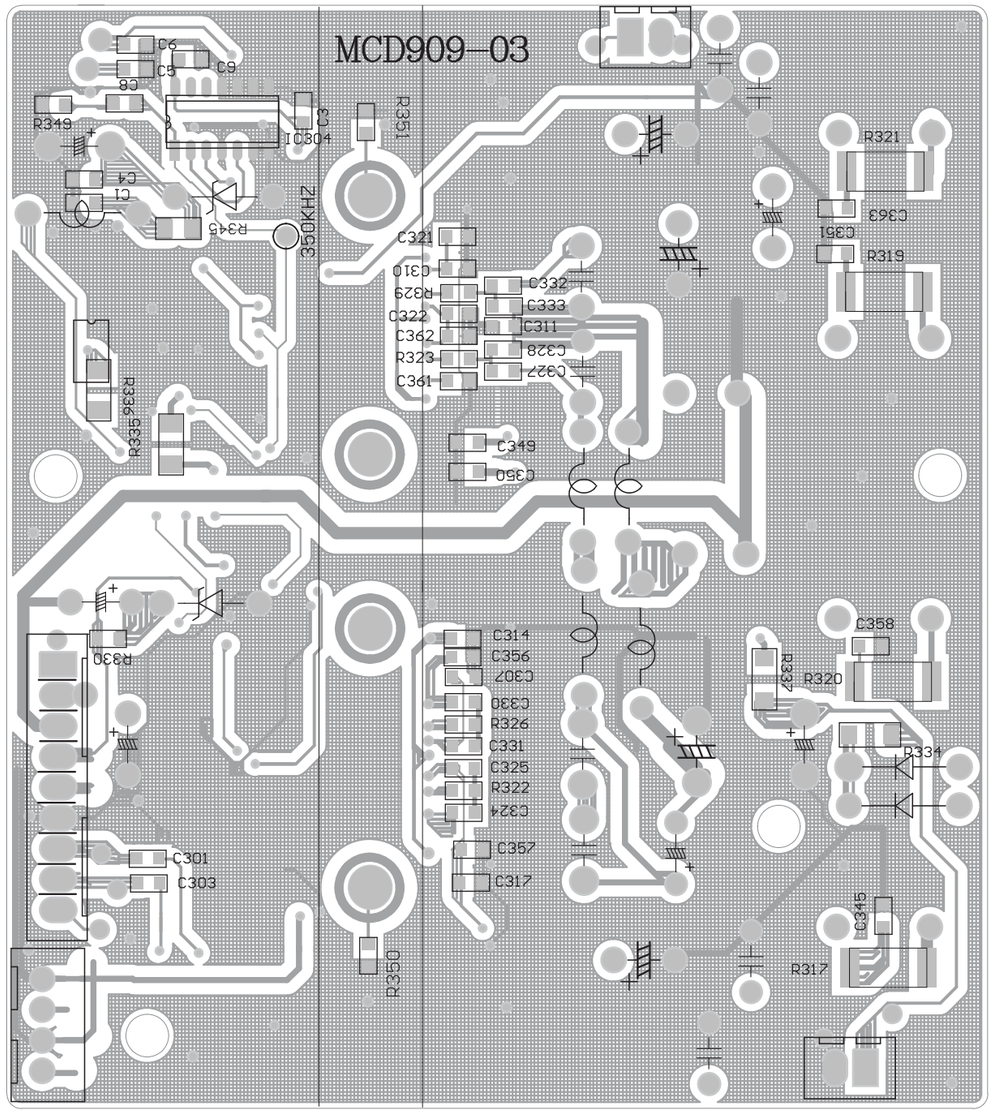
8 - 1

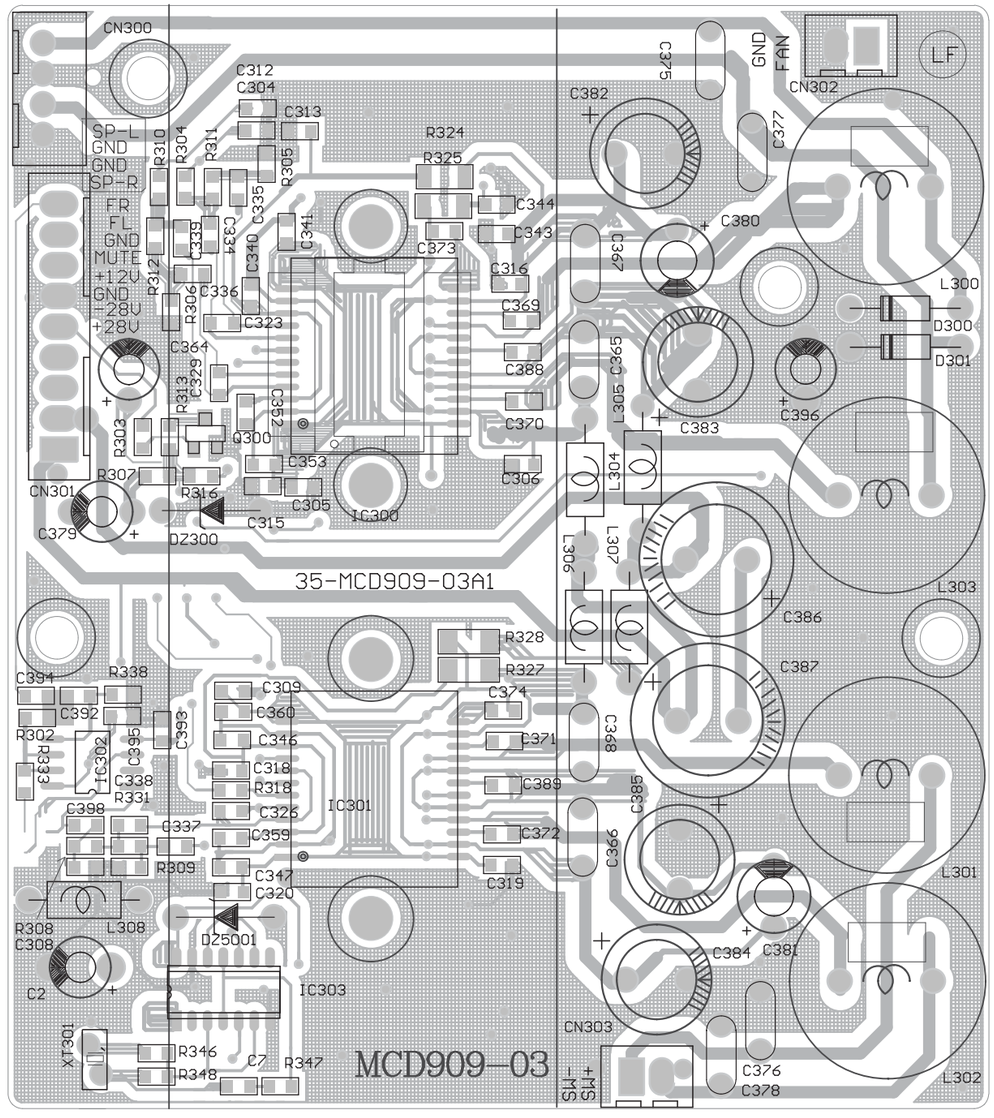
CIRCUIT DIAGRAM - AMP BOARD



8 - 2

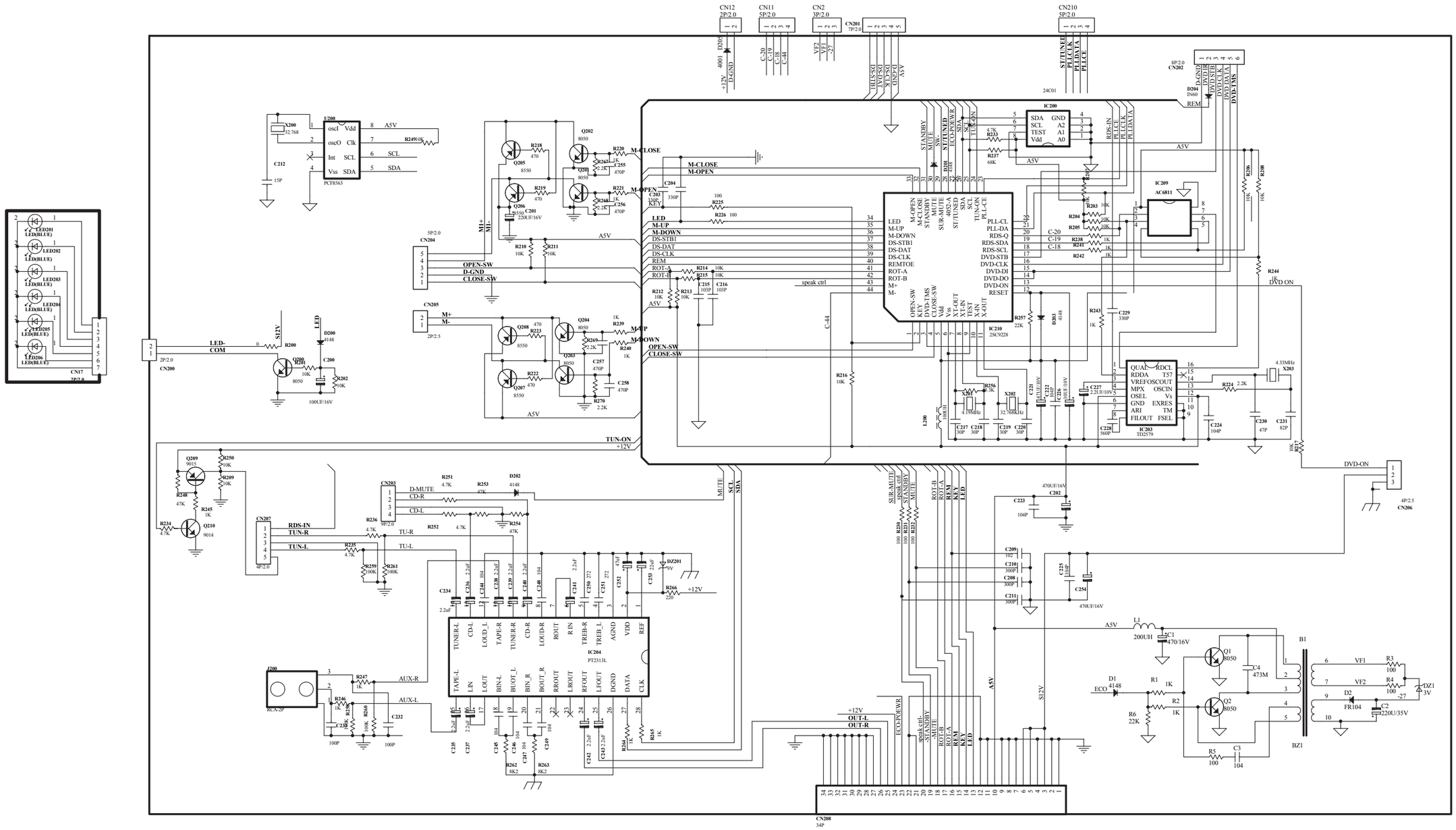
LAYOUT DIAGRAM - AMP BOARD





9- 1

CIRCUIT DIAGRAM - CPU BOARD



note: tolerance RES±10%

CAP±20%,

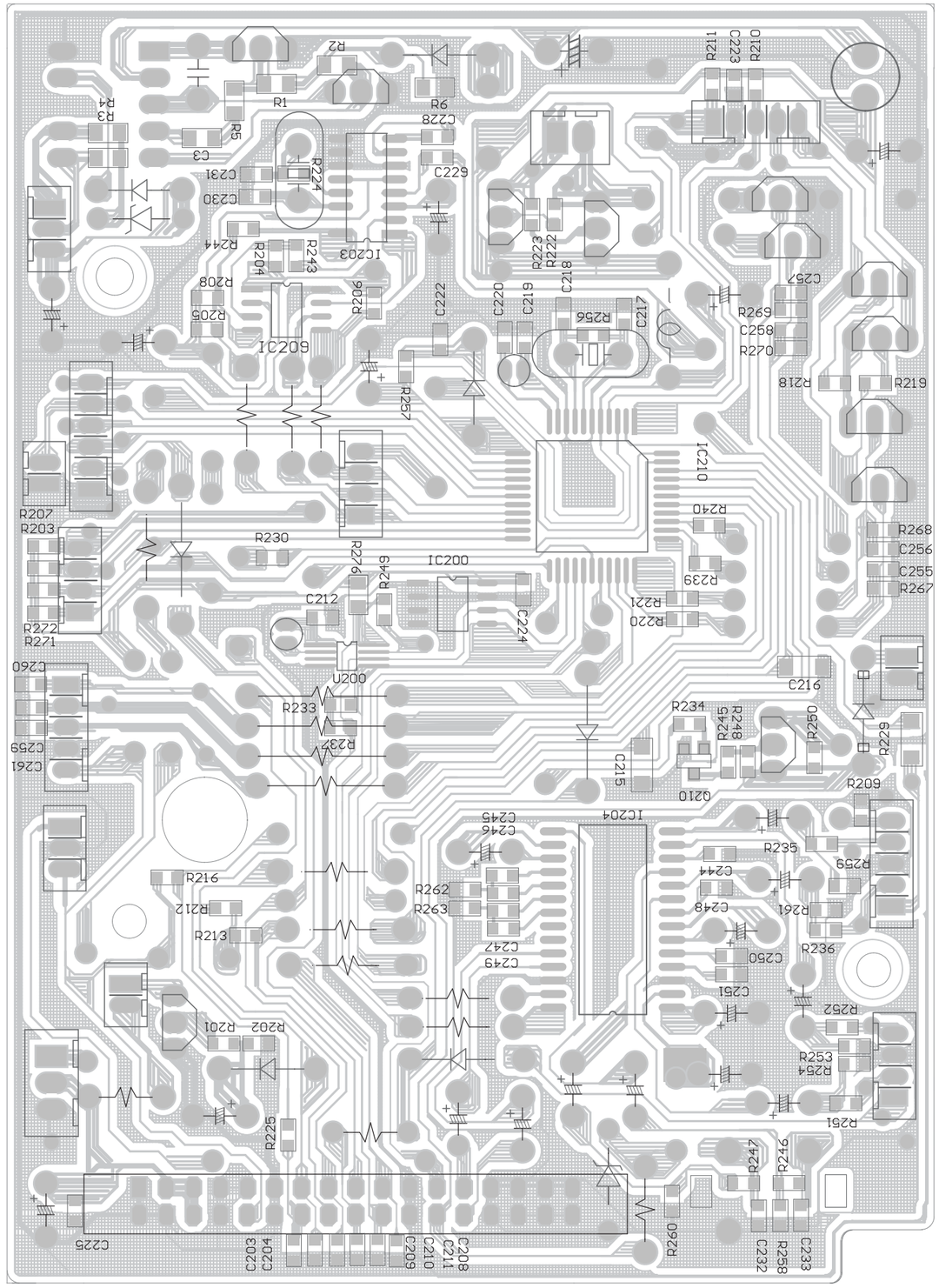
special parts nated beside parts

All parts comply with suppliey environment

protect material licf regulate by green envionment management

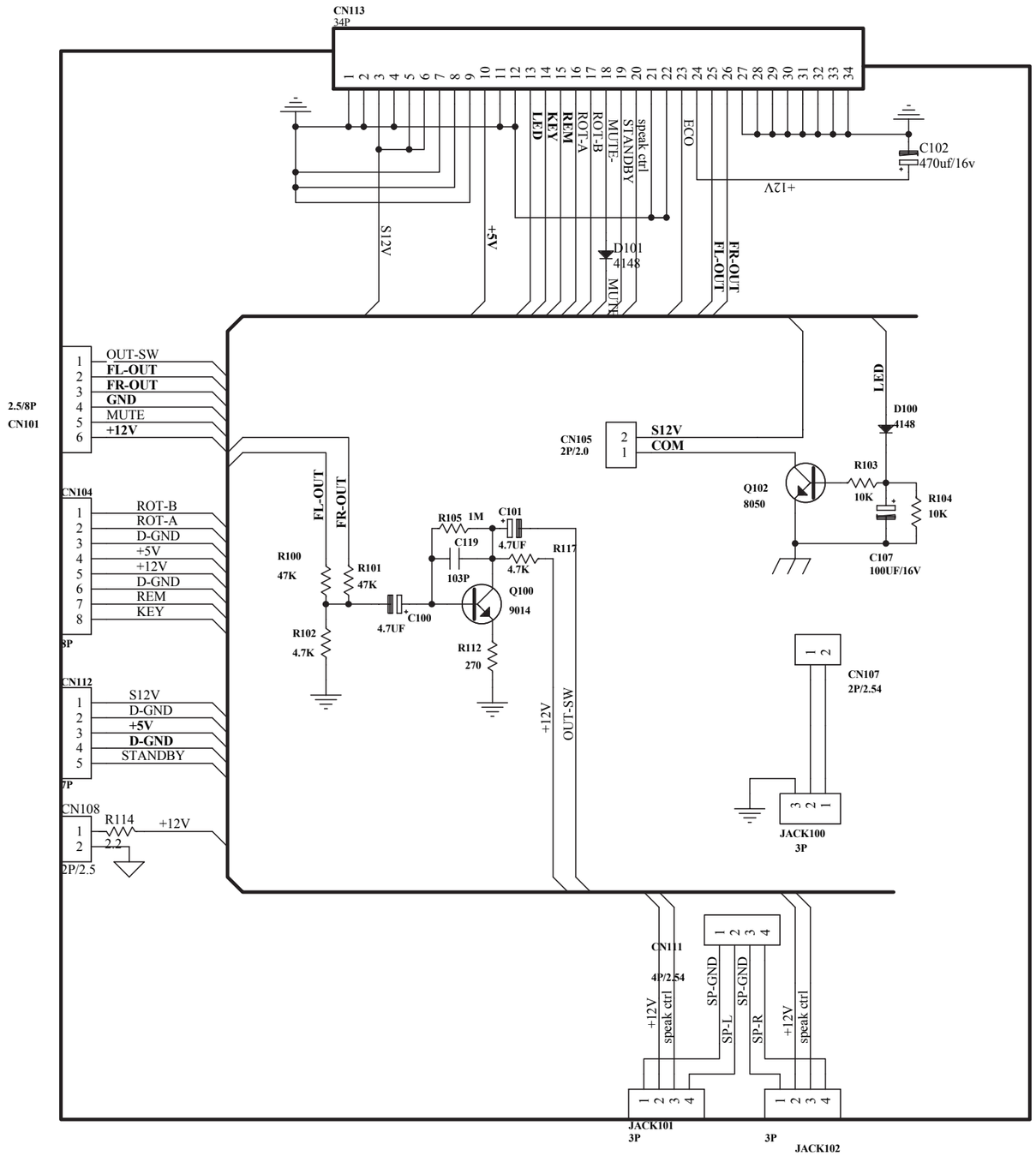
9 - 2

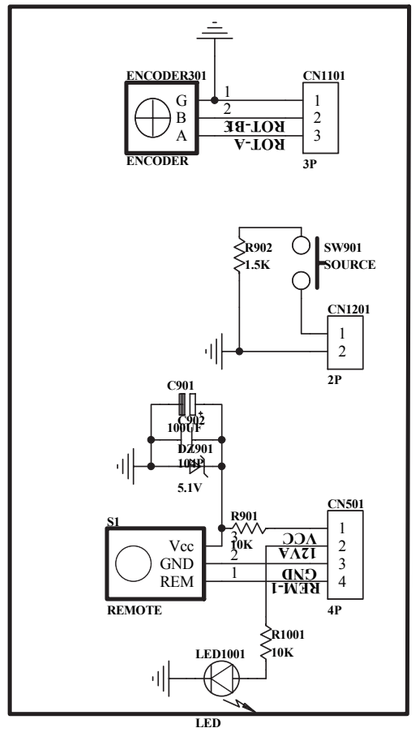
LAYOUT DIAGRAM - CPU BOARD



10 - 1

CIRCUIT DIAGRAM - Pre- AMP BOARD





note： tolerance RES±10%

CAP±20%，

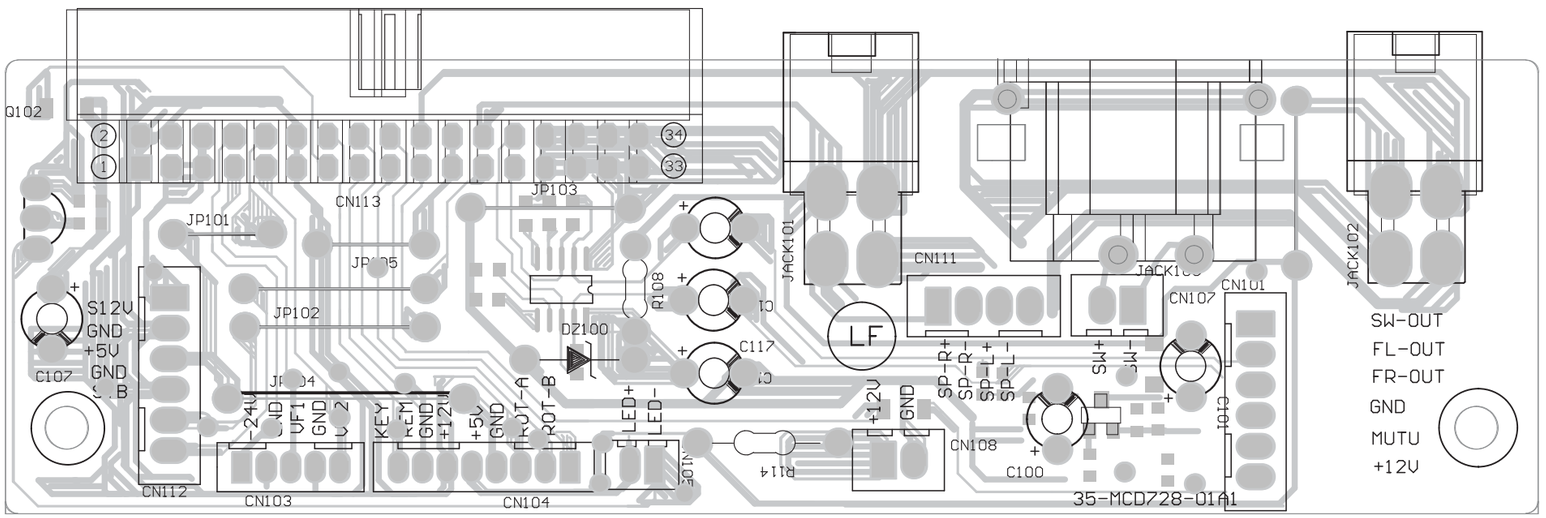
special parts nated beside parts

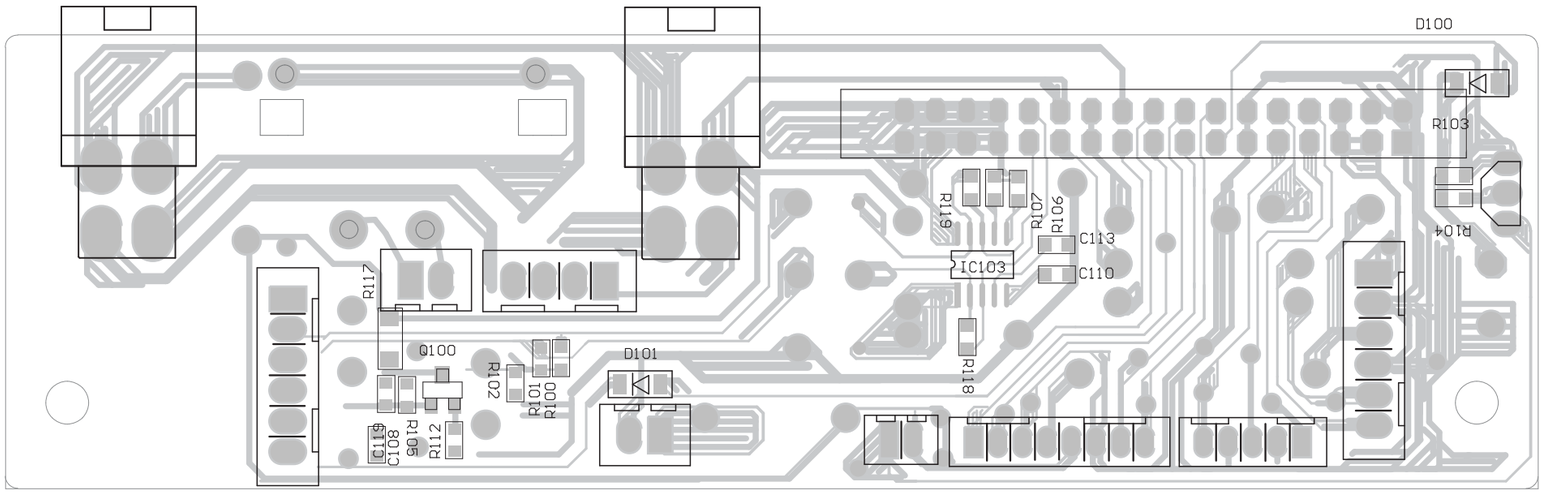
All parts comply with suppliey environment

protect material licf regulate by green envionment management

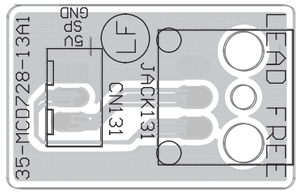
10 - 2

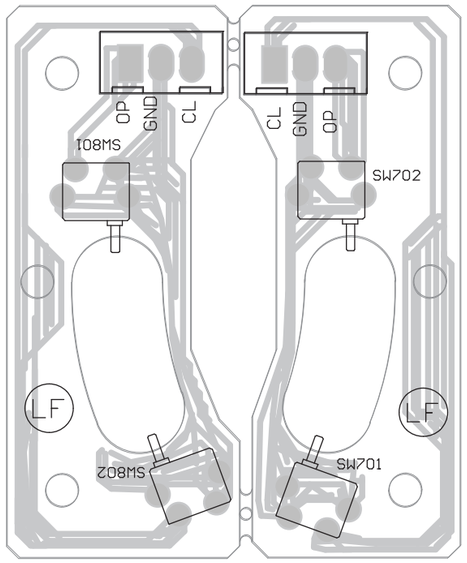
LAYOUT DIAGRAM - Pre- AMP BOARD

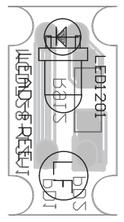


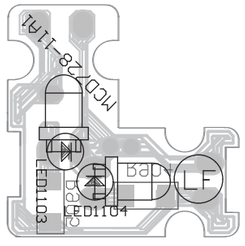


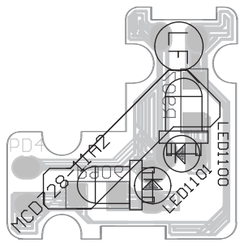
MUTI PCB

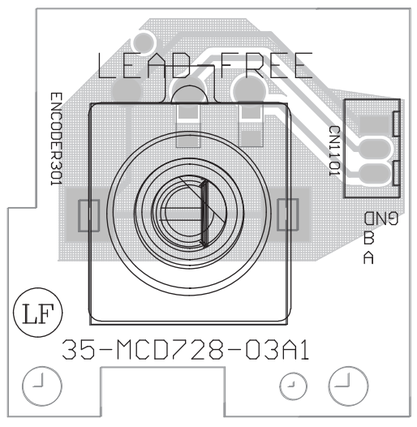




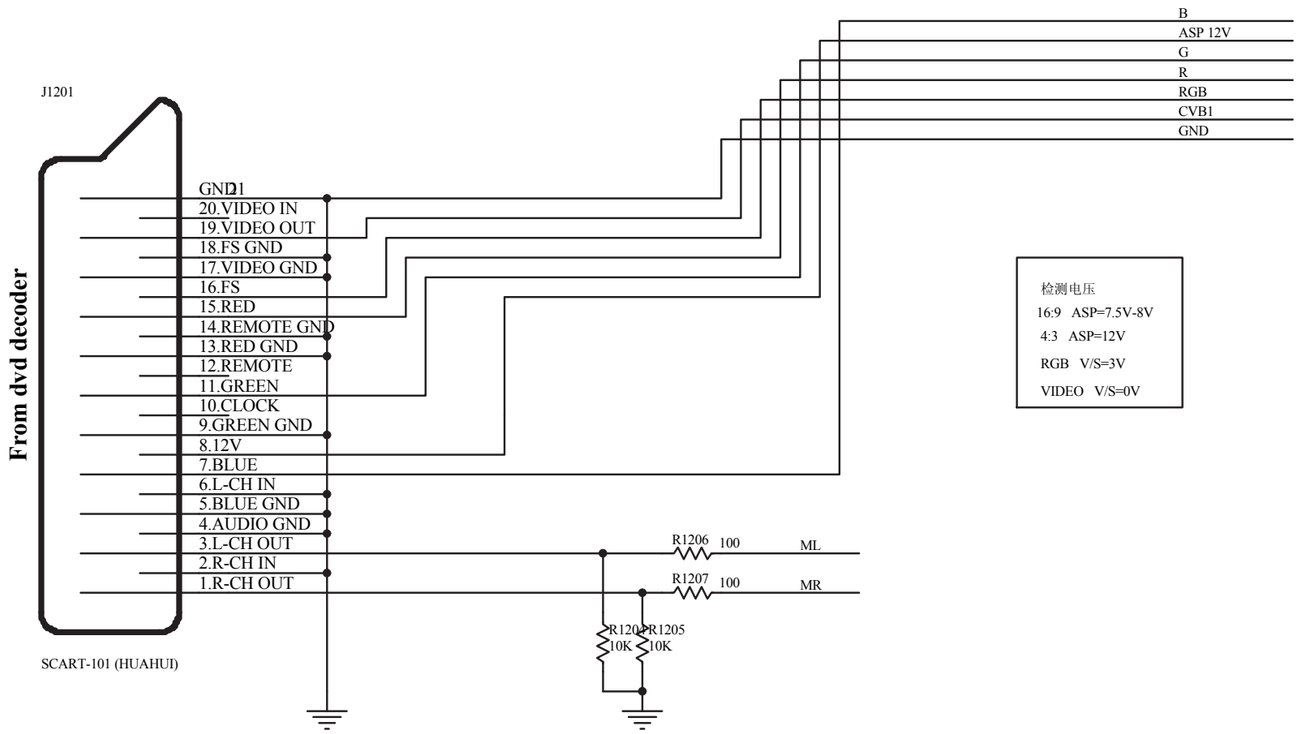




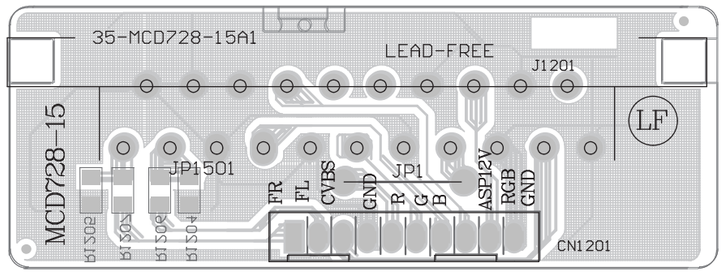




12 - 1



SCART BOARD

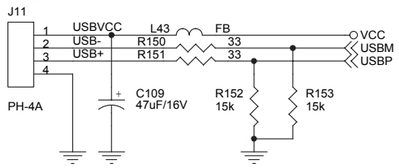


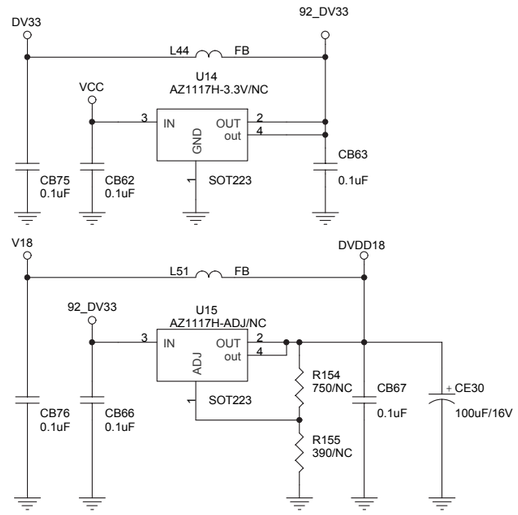
13 - 1

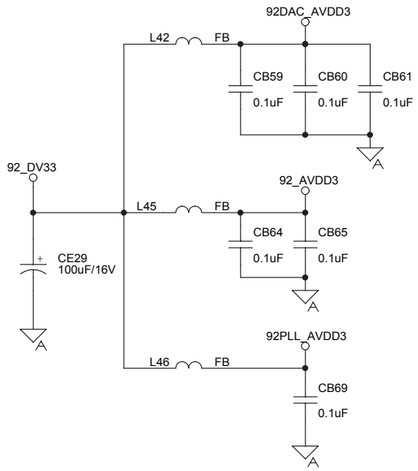
CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired,program for referrence only.

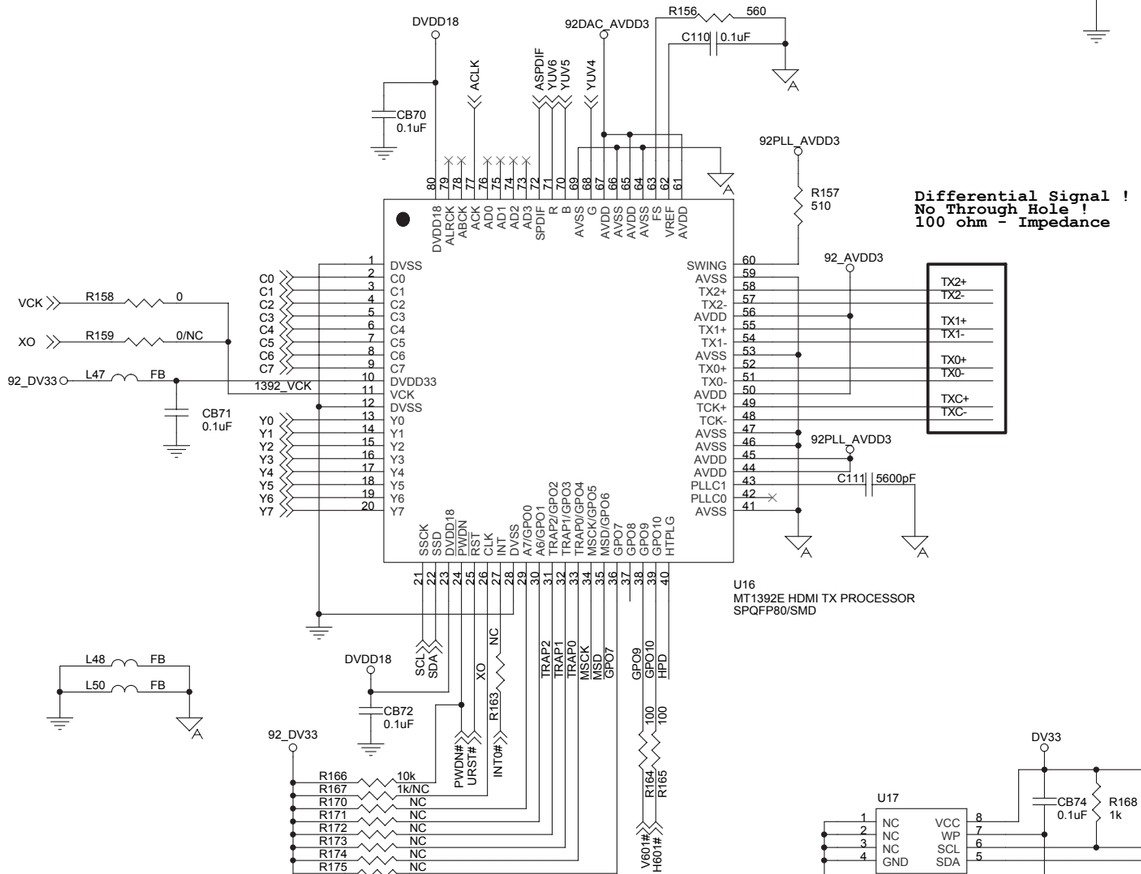
EJS89HD18 MPEG board elements sch



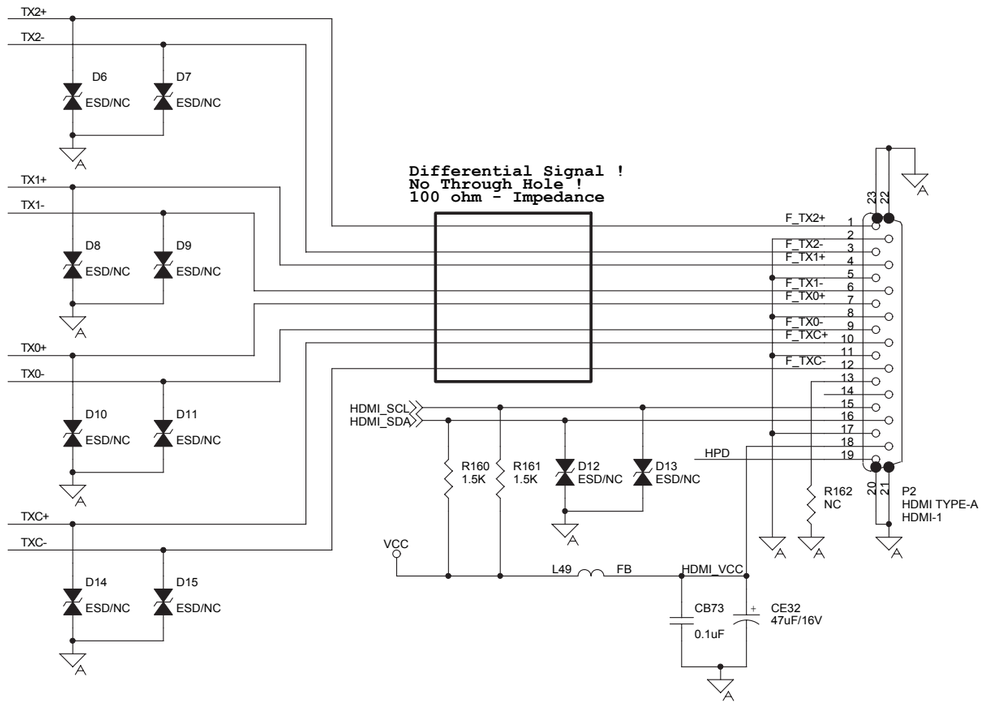


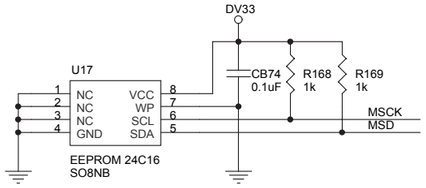


Closed to MT1392 Power Pin !



Differential Signal !
No Through Hole !
100 ohm - Impedance



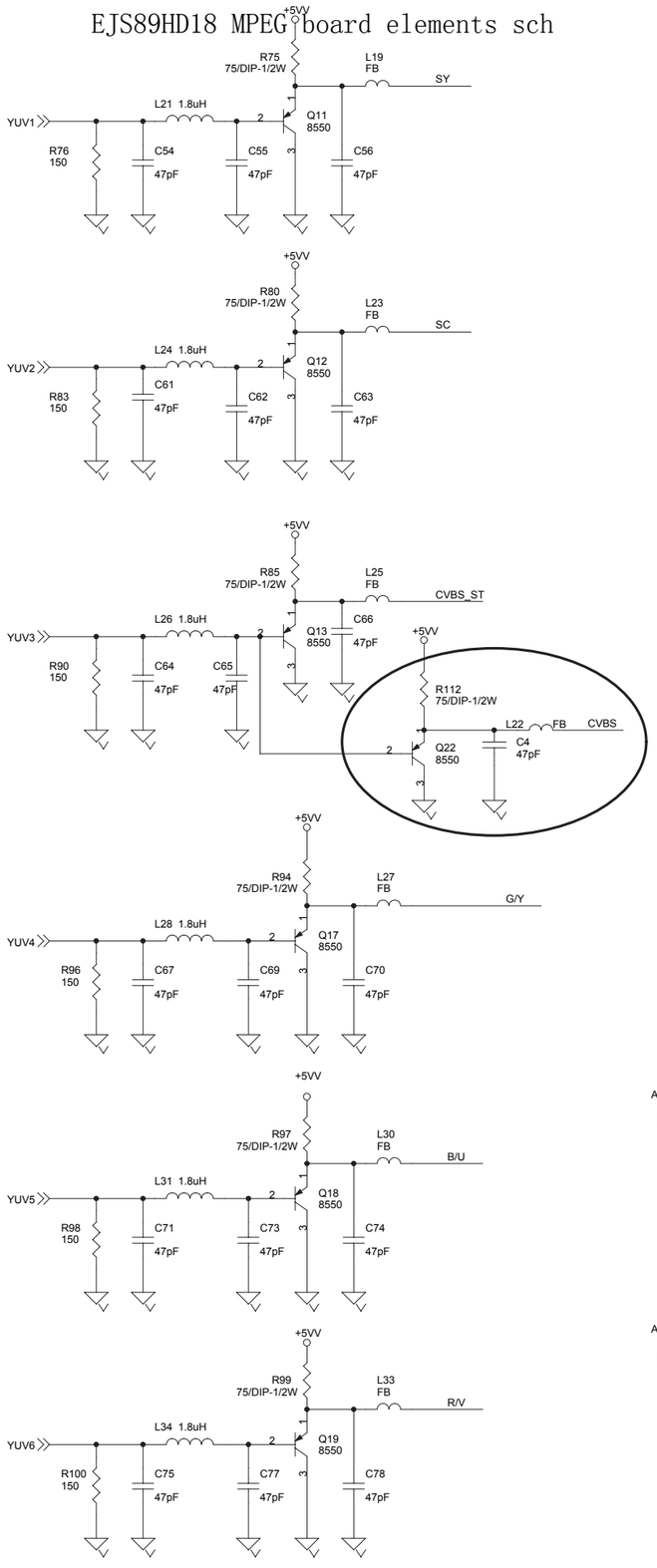


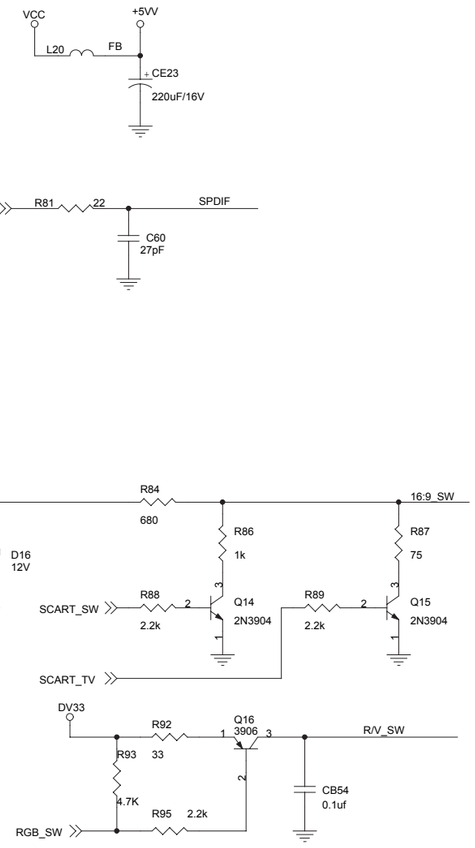
13 - 2

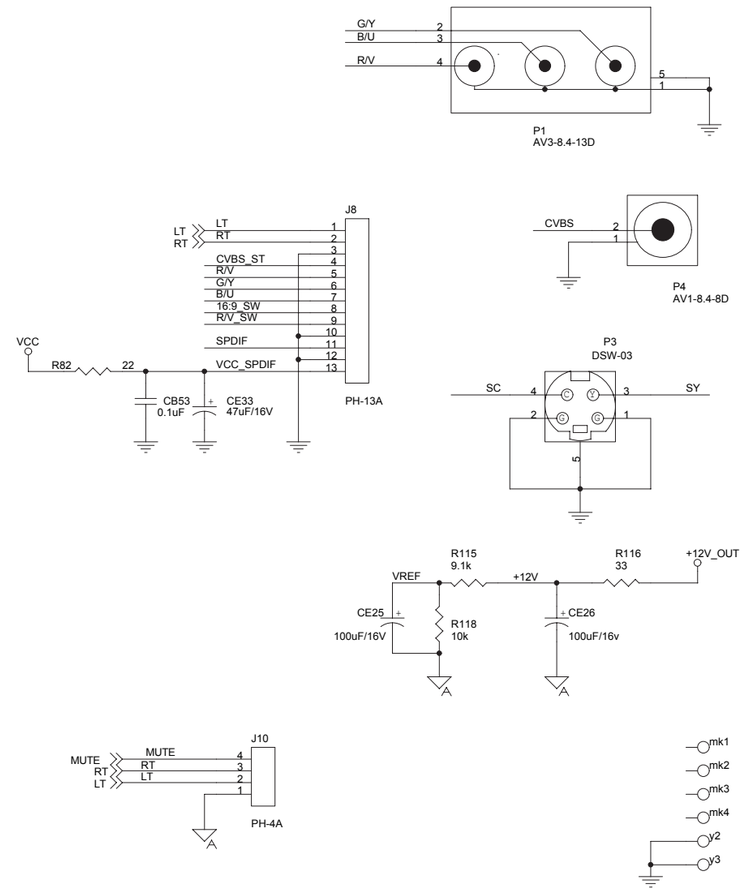
CIRCUIT DIAGRAM - DVD MPEG BOARD

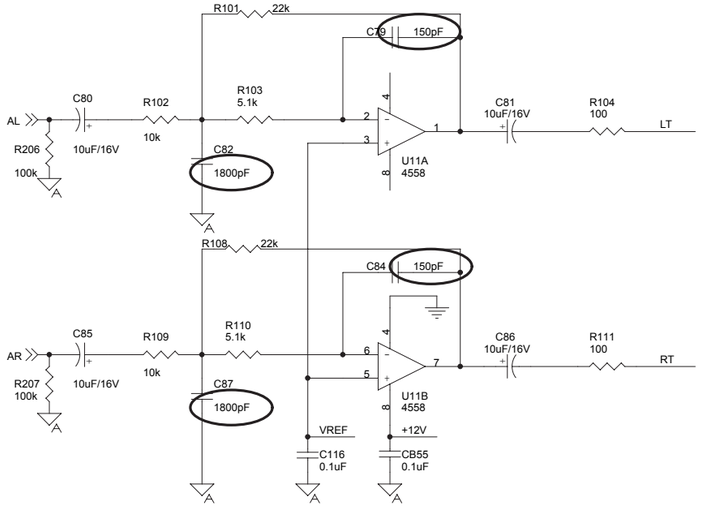
MPEG board is not repaired,program for referrence only.

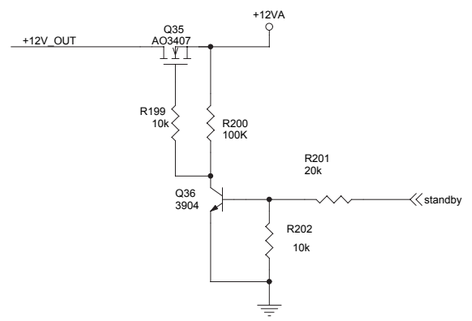
EJS89HD18 MPEG board elements sch







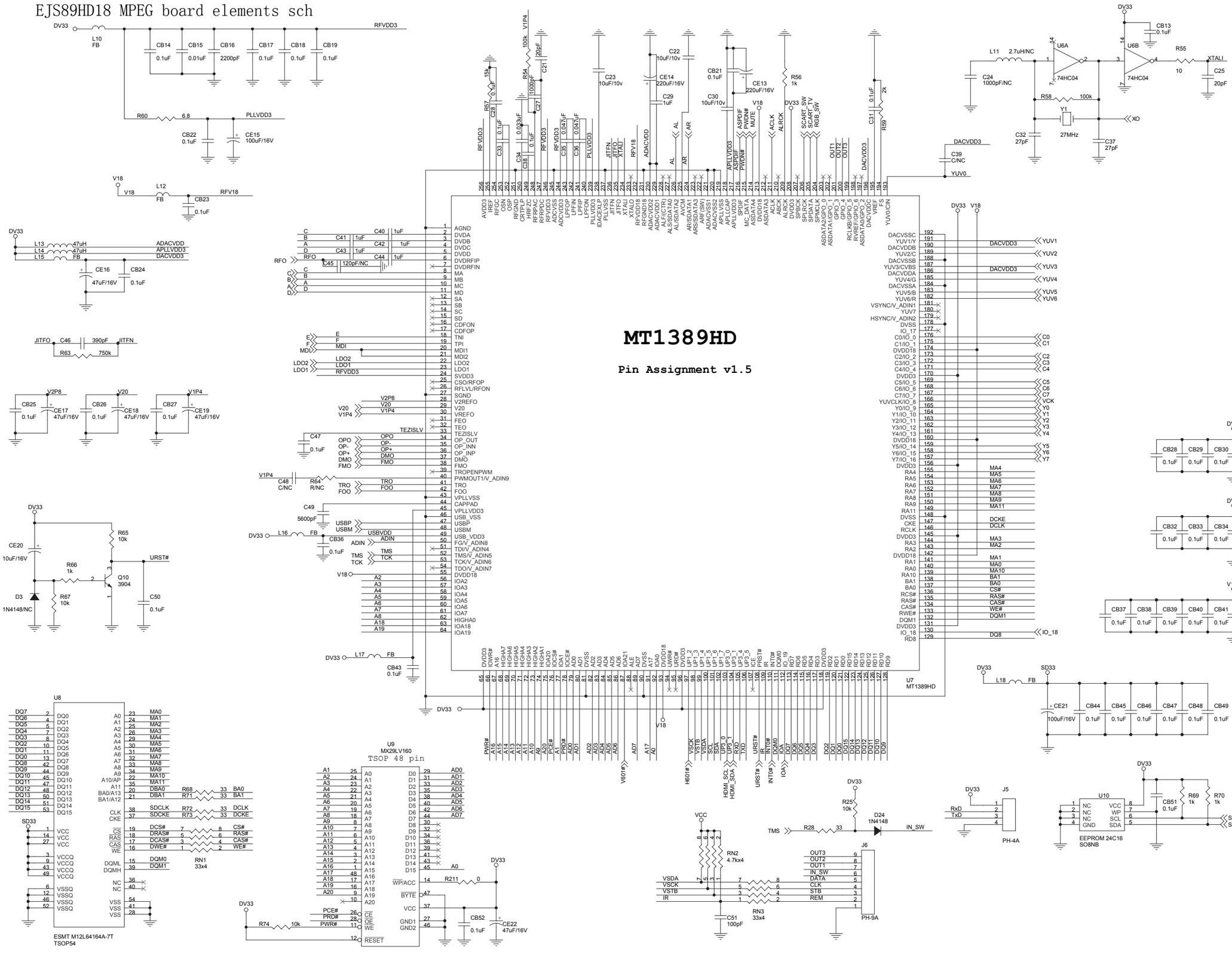




13 - 3

CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired,program for referrence only.

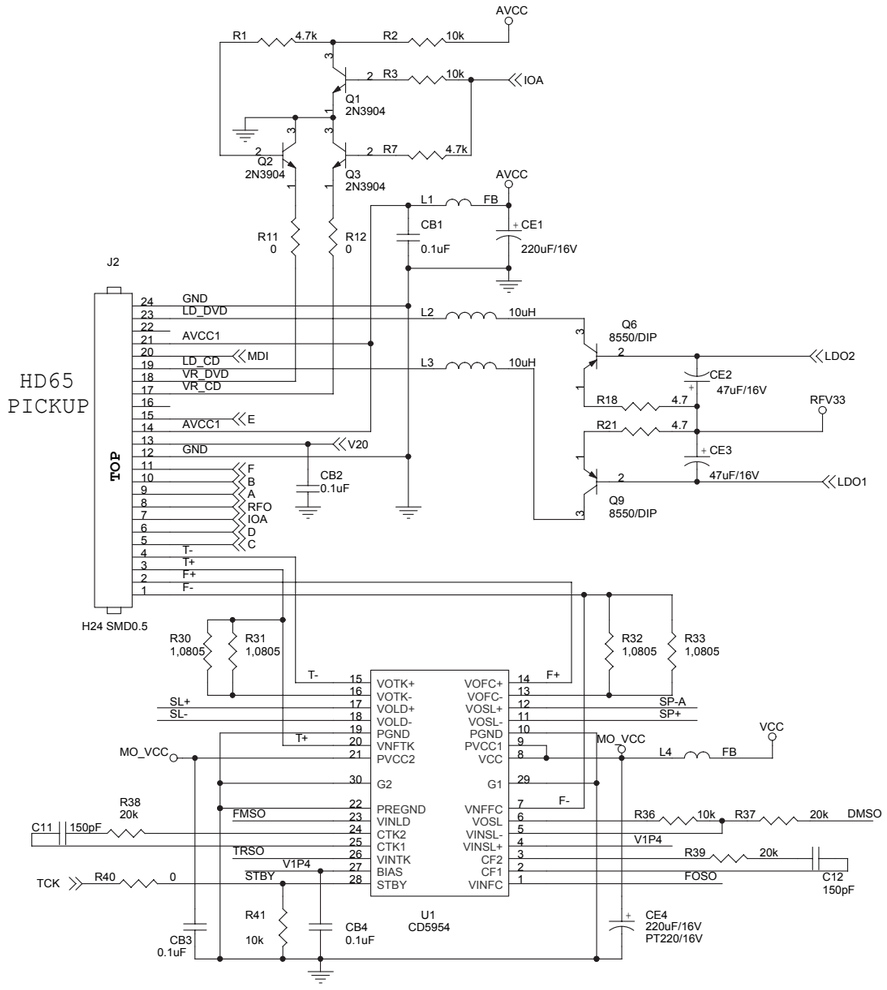


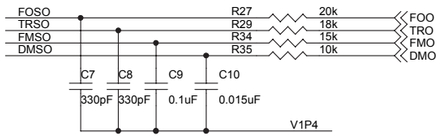
13 - 4

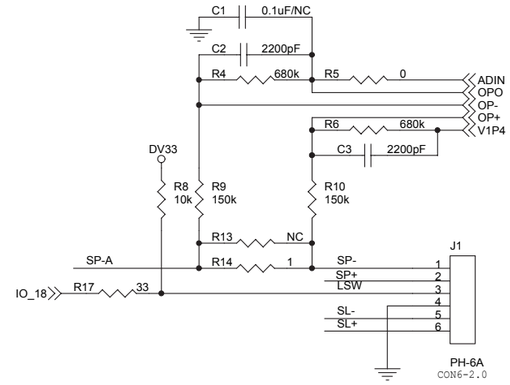
CIRCUIT DIAGRAM - DVD MPEG BOARD

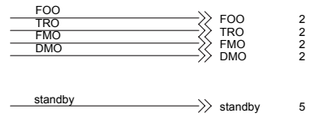
MPEG board is not repaired,program for referrence only.

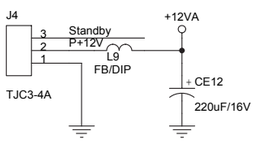
EJS89HD18 MPEG board elements sch

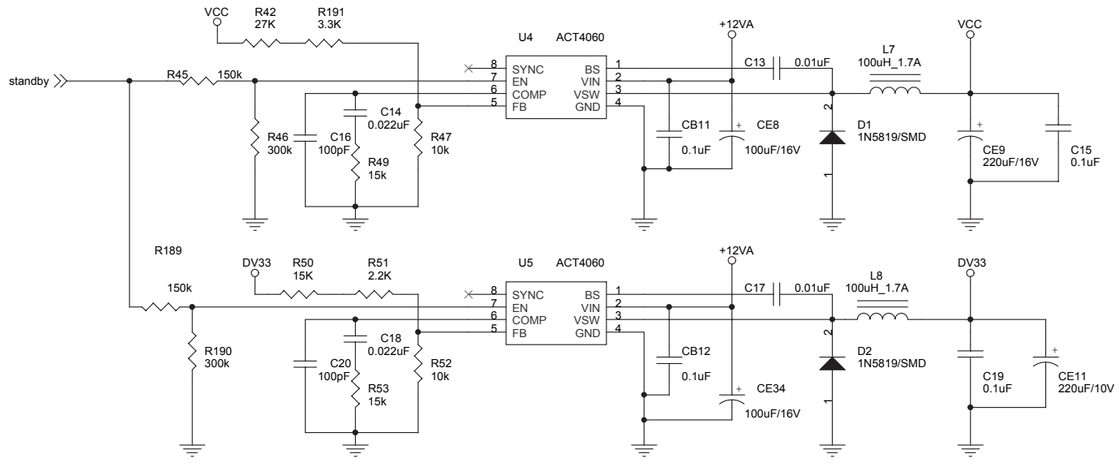


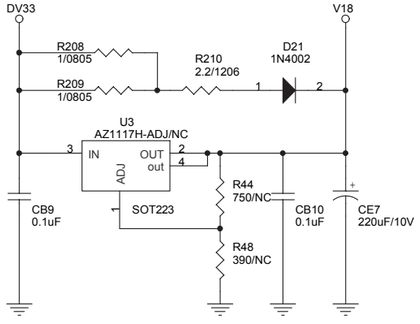


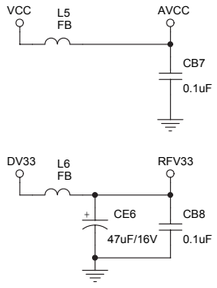








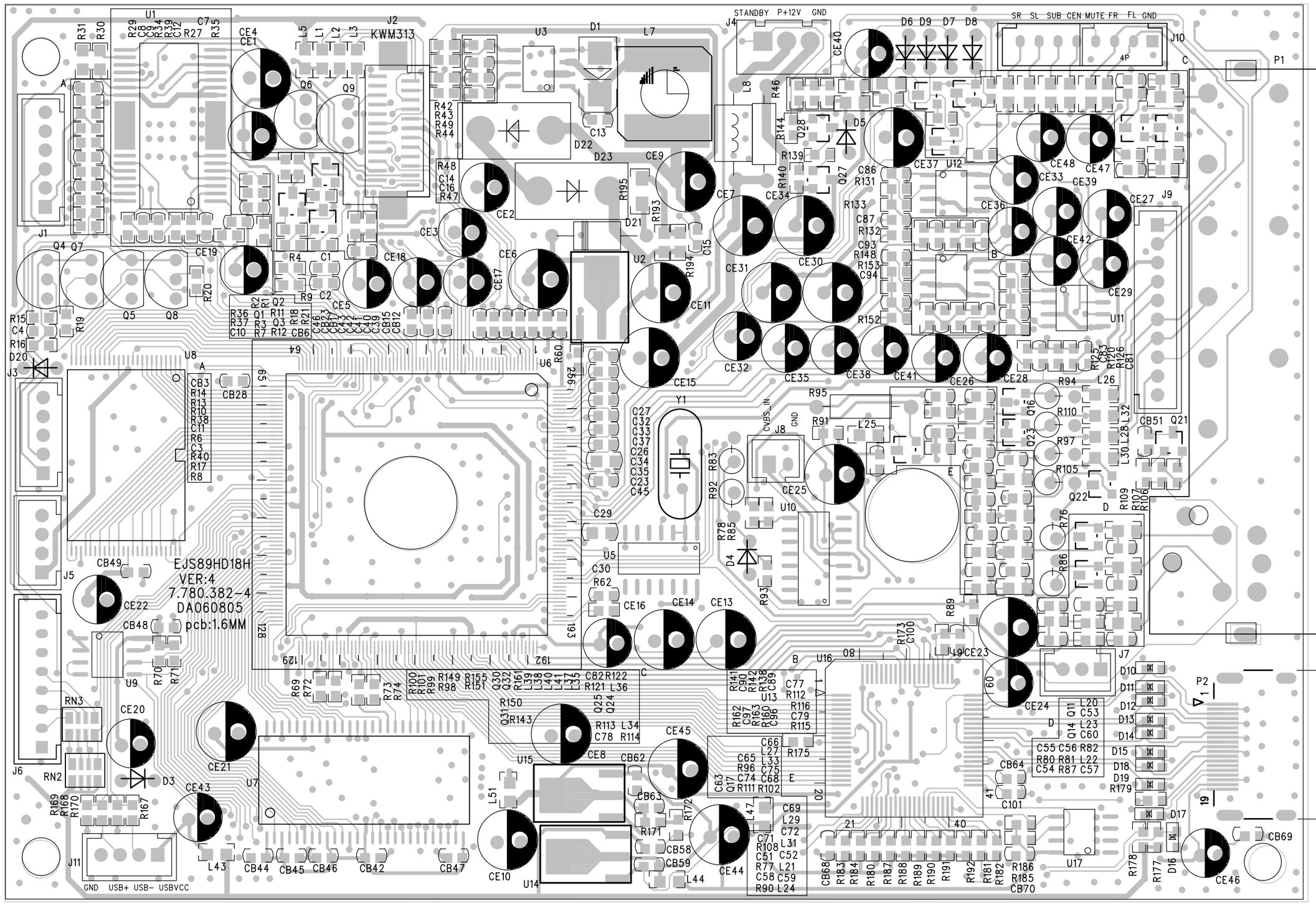




13 - 6

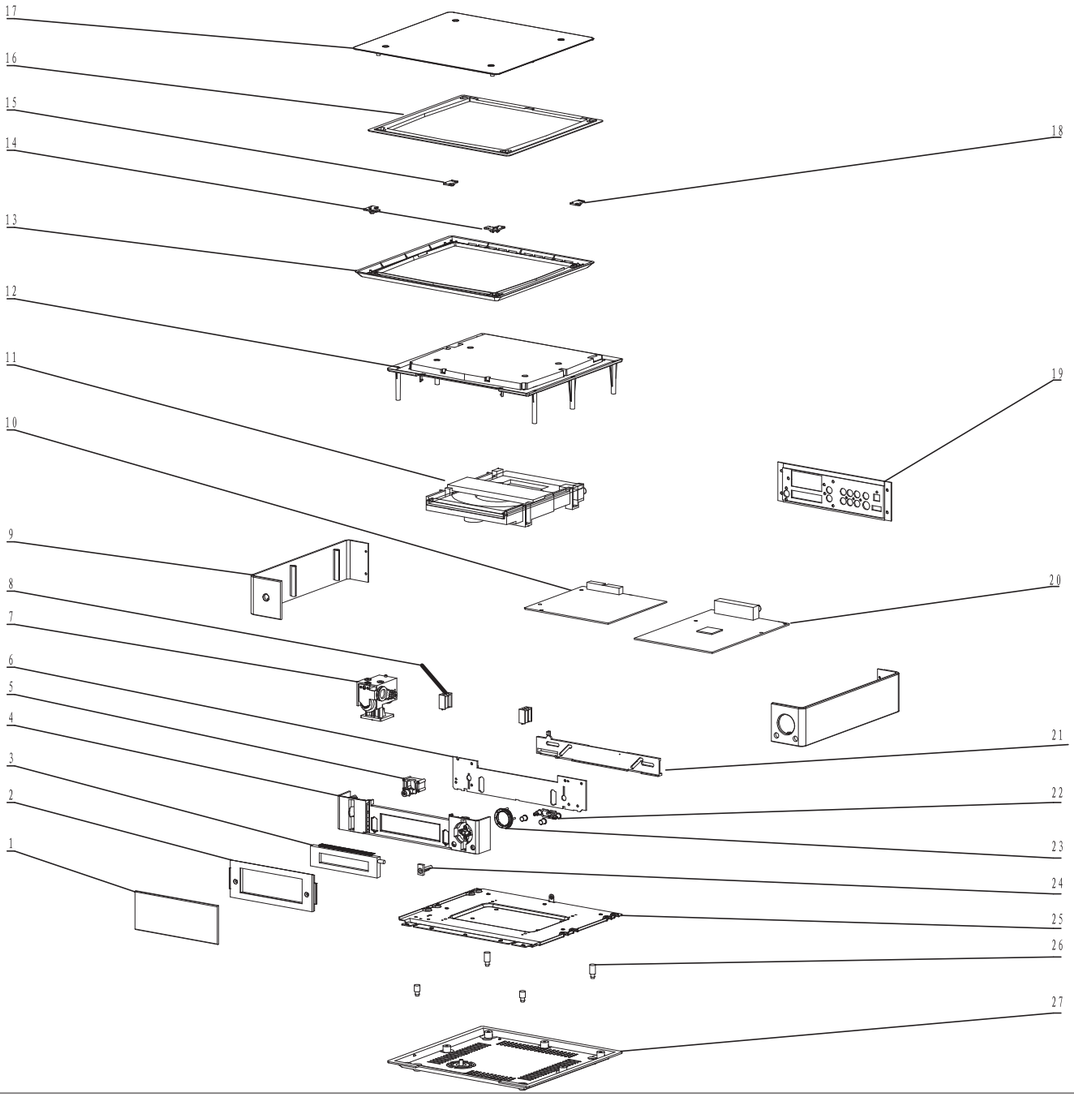
LAYOUT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired,program for referrence only.



14 - 1

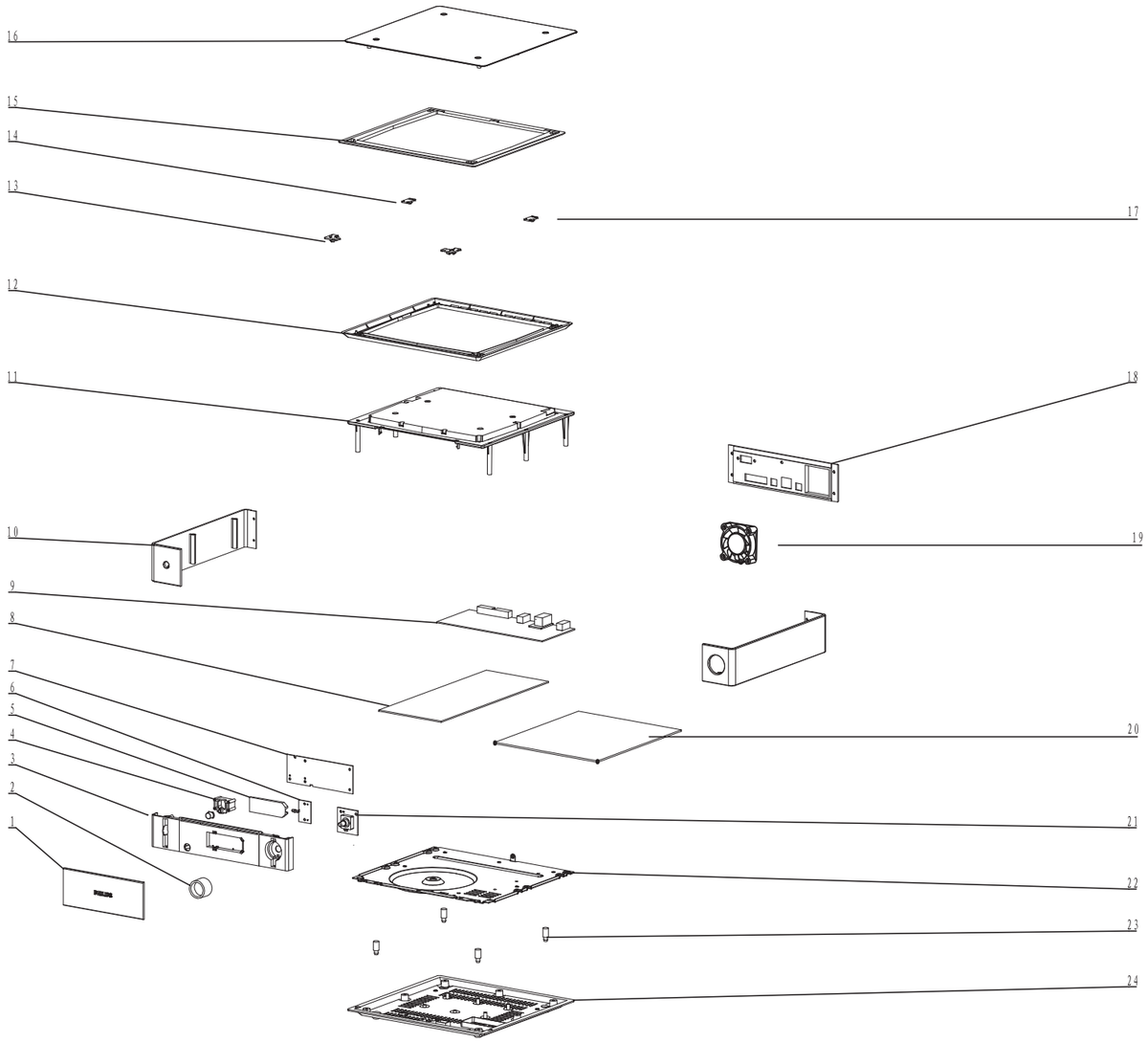
DVD- EXPLODED VIEW DIAGRAM



NO.	PART NO.	QTY.	DESCRIPTION
1	DISPLENS	1	DVD LENS
2	DRBKT	1	DVD DOOR BRACKET
3		1	VFD DISPLAY
4	DVDFRT	1	DVD FCAB
5	STAYKNOB	1	STANDBY BUTTON
6		1	DISPLAY PCB ASSY
7	MOTORASSY	1	MOTOR ASSY
8	DRVBKT	2	DVD DRIVE BRACKET
9		1	DVD SIDEPLATE
10		1	CPU PCB ASSY
11	DISCASSY	1	DVD MECHANISM
12	TOPPC	1	TOP COVER 1
13		1	TOP COVER 2
14		2	TOP LED PCB 3
15		1	TOP LED PCB 1
16	LENS	1	TOP LIGHT LENS
18		1	TOP LED PCB 2
19	DVDBCK	1	DVD BCAB
20		1	DVD DECODE
21	SLIDEBKT	1	DVD SLIK PLANK
22	LPKNOB	1	DVD SKIP BUTTON
23	CTLBKT	1	DVD CONTROL BUTTON-4 BRACKET
24	DRPOSTL/R	1	DVD DOOR POST L/R
25		1	DVD MAIN COVER METAL
26		2 2	RUBBER FOOT A/B
27	DVDBTM2	1	DVD BOTTOM

14 - 2

AMP- EXPLODED VIEW DIAGRAM



NO.	Item	QTY.	DESCRIPTION
1	LENS2	1	AMP LENS
2	VOLKNOB	1	VOLUME KNOB
3	AMPFRT	1	AMP FCAB
4	SCBKT	1	SOURCE BUTTON BRACKET
5		1	LOGO LIGHT GUIDE
6		1	AMP FRONT LED PCB
7		1	REMOTE CONTROL ASSY
8		1	POWER PCB ASSY
9		1	PRE-AMP PCB ASSY
10	SIDEL&SIDER	1	AMP SIDE PLATE L/R
11	TOPPC1	1	TOP COVER 1
12	LENS1	1	TOP LIGHT LENS
13		2	TOP LED PCB 3
14		1	TOP LED PCB 1
15	TOPCV2	1	TOP COVER 2
16	TOP	1	TOP COVER
17		1	TOP LED PCB 2
18	AMPBCK	1	AMP BCAB
19	FAN	1	FAN
20		1	AMP PCB
21		1	VOL PCB ASSY
22		1	AMP METAL BOTTOM
23		4	RUBBER FOOT
24	AMPBTM	1	AMP BOTTOM

ACCESSORIES PARTS LIST

ACCORD	9940 000 04988	AC LINE CORD 1.8M (/12)
ACLINE1	9965 100 06509	AC LINE CORD 180 UL (/98)
ACLINE1	9940 000 05166	AC LINE CORD 1.8M (for /93)
ACLINE2	9965 100 06510	AC LINE CORD 100 (/98)
ACLINE2	9965 100 07799	AC LINE CORD 100#3.96/3P(/93)
VCBL1	9965 100 00218	VIDEO CABLE 1.5m 3P RD WHI YEL
VCBL2	9965 100 02970	VIDEO CONNECTION CABLE 21PINS
REMOTE	9965 100 02966	REMOT CONTROL ASS'Y PRC501-10(/12)
REMOTE	9965 100 07801	REMOTE CONTROL ASSY PRC501-10(/93)
SPKL	9965 100 02967	SPEAKER BOX ASS'Y(L) MCD728/12
SPKL	9965 100 06506	SPEAKER BOX ASSY(L) MCD728/98
SPKL	9965 100 07802	SPEAKER BOX ASSY(L) MCD728/93
SPKR	9965 100 06507	SPEAKER BOX ASSY(R) MCD728/98
SPKR	9965 100 02968	SPEAKER BOX ASS'Y (R)MCD728/12
SPKR	9965 100 07803	SPEAKER BOX ASSY(R) MCD728/93
SPKWF	9965 100 02969	WOOFER SPEAKER ASS'Y MCD728/12
SPKWF	9965 100 06508	WOOFER SPEAKER BOX ASS'Y/98
SPKWF	9965 100 07800	WOOFER SPK BOX ASSY MCD728/93
	9965 100 00213	CONTROL CABLE 350 2.5/34P
WIRE1M5	9965 000 41018	FM ANTENNA WIRE 1.5m
WIRE330	9965 100 02971	WIRE 330 34P/2.5
BRK	9965 000 41617	PLEXIG. BKT ASS'Y PH MCD705

MECHNICAL&MISCELLANEOUS PARTS FOR AMP

ACSOCK	9940 000 05165	AC SOCKET 1A/250V
AMPBCK	9965 100 02962	MCD759 AMP CABINET BACK ABS
AMPBTM	9965 100 00472	AMP BOTTOM HIPS
AMPFRT	9965 100 00469	AMP CABINET FRONT
FAN	9965 100 02965	MINI FAN RDM4010S 12V/250
FAN	9965 100 07807	MINI FAN RDM4010S DC12V/0.7A(/93)
LENS1	9965 100 00239	TOP LIGHT LENS PMMA
LENS2	9965 100 02964	AMP MCD705 DISPLAY LENS
LAMP1	9965 100 02922	TOP COVER LAMP PCB ASS'Y
LAMP2	9965 100 02923	TOP COVER LAMP PCB ASS'Y
LAMP3	9965 100 02924	TOP COVER LAMP PCB ASS'Y
P-AMP	9965 200 00273	PRE-AMP PCB ASS'Y MCD728 (/93)
FLAMP	9965 200 00277	FRONT LAMP PCB ASS'Y MCD728 (/93)
VOL	9965 200 00274	VOLUME PCB ASSY MCD728 (/93)
AMP	9965 200 00276	AMP PCB ASSY MCD728 (/93)
PWASSY	9965 100 07805	PWR PCB AS DVD AMP POW281 330W(/93)
PWASSY	9965 100 02942	POWER PCB ASS'Y 320W (/12)
REMO	9965 100 02940	REMOTE CONTROL ASS'Y MCD728
RIGOUT	9965 000 41638	MCD705 RIG OUT METAL PLATE
SCBKT	9965 100 02963	MCD759 AMP SOURCE KNOB BKT
SCKNOB	9965 100 00476	AMP SOURCE KNOB SILVER
SIDEL	9965 100 02959	SIDE PLATE(L)
SIDER	9965 100 02960	MCD759 SIDE PLATE(R)
TOP	9965 100 02961	MCD728 AMP TOP COVER
TOPPC1	9965 100 00240	TOP COVER1 PC
TOPCV2	9965 100 06516	TOP COVER 2
VOLKNOB	9965 100 00477	AMP VOLUME KNOB
JACK100	9965 100 00467	POWER SOCKET DC-101A-EP
ENCODER30	9965 000 41645	ROT ENCODER

ELECTRICAL PARTS - AMP PCB

IC300TO301	9965 100 00464	CHIP IC TDA8920(PACKING)
IC302	9965 100 02941	IC TL072 SOP
IC303	9965 100 00463	CHIP IC 74HCU04D
IC304	9965 100 00267	IC HEF4013T CHIP
XT301	9965 100 00266	CERAMIC FILTER CRB 700KHz
FRTLAMP	9965 200 00277	FRONT LAMP PCB ASS'Y MCD728
LED1001	9965 100 00260	WHITE LED DIODE 3R41W71W-EB

MECHNICAL&MISCELLANEOUS PARTS FOR DVD

101X31	9965 100 01242	1204 FILTER LENS (B)
CRLBTN1	9965 100 00249	DVD CONTROL BUTTON ABS(UP&DOWN
CRLBTN2	9965 100 00250	DVD CONTROL BUTTON ABS(L&R)
CRLBTN3	9965 100 00251	DVD CONTROL BUTTON CENTRE ABS
CTLBKT	9965 100 00245	DVD CONTROL BUTTON BRACKET ABS
DISPLENS	9965 100 02937	MCD705 DVD DISPLAY LENS FOR728
DRBKT	9965 000 38468	DVD DOOR BRACKET
DRPOSTL	9940 000 05163	DVD DOOR POST-L
DRPOSTR	9940 000 05164	DVD DOOR POST-R
DRVBKT	9965 000 41630	MCD705 DVD DRIVE BKT
DVDBCK	9965 100 02935	MCD728 DVD CABINET BACK (/12)
DVDBCK	9965 100 06517	CABINET BACK ABS (/98)
DVDBTM2	9965 000 38160	DVD CABINET BOTTOM
DVDDR	9965 100 00244	DVD DOOR ABS
DVDFRT	9965 100 00242	DVD CABINET FRONT ABS
LENS	9965 100 00239	TOP LIGHT LENS PMMA
LPKNOB	9965 100 00457	DSC LEAP KNOB SILVER
OPENKNOB	9965 100 00458	OPEN/CLOSE KNOB SILVER
RODCD	9965 100 02938	NE1300CD ROD CORD H=5
SLIDEBKT	9965 100 02936	MCD705 DVD SLID PLANK
STAYBKT	9965 100 00456	DVD STANDBY KNOB BRACKET
STAYKNOB	9965 100 00459	DVD STANDBY KNOB SILVER
TOP	9965 100 02934	MCD728 DVD TOP COVER
TOPPC	9965 100 00240	TOP COVER1 PC
TUBD	9965 100 02927	TUNER PCB ASS'Y EC06-04
DECCARD	9965 100 02929	DECODER CARD ASS'Y MCD728/12 (DVD MPEG BOARD)
DECCARD	9965 100 06515	DECODER CARD(/98) (DVD MPEG BOARD)
DECCARD	9965 100 07804	DECODER CARD ASSY MCD728/93 (DVD MPEG BOARD)
DISCASSY	9965 100 02928	DISC ASS'Y MCD708
LAMP1	9965 100 02922	TOP COVER LAMP PCB ASS'Y
LAMP2	9965 100 02923	TOP COVER LAMP PCB ASS'Y
LAMP3	9965 100 02924	TOP COVER LAMP PCB ASS'Y
MOTORASSY	9965 000 41634	MOTOR ASS'Y MCD708 (/12)
MOTORASSY	9965 100 06513	MOTRO ASSY (/98)
CPUBD	9965 200 32114	CPU PCB ASS'Y MCD728/98 (/93)
DISPBD	9965 200 32116	DISPLAY PCB ASSY (/93)
OPBD	9965 200 00268	OPTICAL TERMINAL PCB AS MCD728 (/93)
JACK131	9965 100 00817	OPTICAL & COAXIAL TERMINAL
JP1501	9965 100 02925	SCART SOCKET CS-121/SCART-113 (/12)
PWSW	9965 100 00522	PW CTR SW ASS'Y 110/22V MCD7X (/98)
46	9965 100 00523	SWITCH VSC-22-1-110/220V-m (/98)

ELECTRICAL PARTS - CPU PCB

D204	9965 100 00495	DIODE IN60 L26
DZ201	9965 100 02919	ZENER DIODE 9.1V 1/2W
IC200	9940 000 04951	IC 24C01A-SC27
IC201	9940 000 04955	IC AC6811(RDS) /12
IC203	9940 000 05147	IC PT2579-SN SMALL (/12)
IC204	9965 100 00814	IC PT2313L
IC210	9965 100 02920	MCU PARTS ASS'Y MCD728/12
IC210	9965 100 06512	MCU PARTS (/98)
J200	9965 100 00228	RCA SOCKET 2p AV2-8.4-13 RD WH (/12)
U200	9965 100 02918	IC PCF8563 SOP8 (/12)
X200	9965 100 000 12	CRYSTAL OSC FREQ.32.768KHz (/12)
X202	9965 100 00012	CRYSTAL OSC FREQ.32.768KHz(/98)
X201	9940 000 04945	CER. FILTER FREQUENCY 4.19MHZ (/12)
X201	9965 100 00013	CRYSTAL 4.194304 MHz 49S (/98)
X203	9940 000 05497	CRYSTAL OSC. 4.332 49S MHZ (/12)
B1	9965 100 02975	TRANSFORMER EE13 5V (/12)

ELECTRICAL PARTS - DISPLAY PCB

IC601	9965 100 00500	IC PT6311/SC16311/CD16311
LED601	9940 000 04947	LED DIODE D3 3B4SCB01 (BLUE)
SW601TO608	9940 000 04963	LIGHT TOUCH SW. TC103 H5
VFD701	9965 100 02921	VFD DISPLAY NE-705D-3.GB

Note: Only these parts mentioned in the list are normal service parts.

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36001065	BLACK SPONGE ALM-2 40X23.5X8.3 65°	4	PCS	
38000194	SCREW 3 X 12 BA BLACK	8	PCS	
27000339	SPEAKER CORDS 4M	1	PCS	
38000795	SCREW 3 X 30 PA NICKEL-PLATE	12	PCS	
41004961	SPEAKER BOX BACK LABEL MCD728/12 40X27	1	PCS	
41004968	TISSUE BLOW MOLDING 75X58cm	1	PCS	
41001014	PE POLYBAG 26X17cm	1	PCS	

27000337	SPEAKER CORDS 1.5M 555T/4P	1	PCS	
41004890	SPEAKER BOX BACK LABEL(R)MCD728/12 40X27	1	PCS	
41002388	PE POLYBAG 20X10cm	1	PCS	
25000951	22WIRE 2P 170 RED BLACK	2	PCS	
25002598	22WIRE 280+240 2.0/8PX1	1	PCS	
36001087	RUBBER FOOT MCD700 ZJ-162 BLACK	4	PCS	
08-MCD728-05A101	SPEAKER GEAR-BOX ASS'Y MCD728	1	SET	
32000127	WORM PREFORMING NE-1300 ASS'Y SET	1	SET	
39-MCD728-09A100	MCD728 SPEAKER GEAR-BOX CABINET TOP ABS	1	PCS	
39-MCD728-10A100	MCD728 SPEAKER GEAR-BOX CABINET BOTTOM	1	PCS	
39-MCD728-11A100	MCD728 GEAR	1	PCS	
39-MCD728-12A100	MCD728 GEAR	1	PCS	
39-MCD728-03A100	MCD728 COVER PCB ABS	1	PCS	
39-MCD728-13A100	MCD728 GEAR	1	PCS	
39-MCD728-14A100	MCD728 GEAR	1	PCS	
39-MCD728-15A100	MCD728 GEAR	1	PCS	
39000431	SINGLE MOTOR WHEEL WHITE	1	PCS	
37-MCD728-03A100	COUPLING SHAFT MCD728	1	PCS	
36001073	LEATHER BELT Φ20X1.2	1	PCS	
37001164	STEEL BALL Φ4	2	PCS	
34000016	MOTOR RF-360C-13450	1	PCS	
38000030	SCREW 3 X 5 FM NICKEL-PLATE	2	PCS	
38000110	SCREW 3 X 10 PA BLACK	7	PCS	
38000156	SCREW 2.6 X 8 PWA	1	PCS	
38000447	SCREW 3 X 10 FA BLACK	1	PCS	
38000465	SCREW 2.6 X 5 FT NICKEL-PLATE	4	PCS	
38000494	SCREW 4 X 6 FM BLACK	1	PCS	
37001162	SPRING 10 Φ0.6	2	PCS	
09-MCD728-07A101	WOOFER SPEAKER ASS'Y MCD728/12	1	SET	
39-MCD709-01A101	MCD709 PORT TUBE BLACK 117X69	1	PCS	
39-MCD709-02A100	MCD709 PORT TUBE BLACK 100X60	1	PCS	
71000077	PAPER Φ70.5XΦ65X110mm	1	PCS	
39-MCD988-49A101	MCD988 WOOFER SPEAKER FRONT PCB HIPS	1	PCS	
39-MCD988-50A101	MCD988 WOOFER SPEAKER FOOT HIPS 10868	2	PCS	
40000372	WOODEN BOX MCD988 430X284X238.5	1	PCS	
28000461	WOOFER SPEAKER 8″ 6Ω200W	1	PCS	

14000867	CHIP CERAMIC CAP. 470P 50V K (0603) X7R	2	PCS	C502,501
14000321	ELECTROLYTIC CAP. 47u 16V L-5 5X11	1	PCS	C505
25000049	PINS CONNECTOR 2.0/8P	1	PCS	CN501
19000103	IC LM7805/LM340T5 7805	1	PCS	IC502
17000025	TRANSISTOR 8050C-5	2	PCS	Q504,503
17000030	TRANSISTOR 8550C-5	2	PCS	Q502,501
19000294	IC TM58PR11S18C	1	PCS	IC501
42000135	BARE WIRE AWG Φ0.6X40MM 1KG=375M	1	PCS	L502
35-MCD728-05A1	FREQUENCY DIVIDER PCB(R) 35-MCD728-05A1	1	PCS	
37001161	METAL BRACKET 20X11X1 MCD728	2	PCS	
38000050	SCREW 3 X 5 BM NICKEL-PLATE	2	PCS	
07-MCD728-08A101	SPEAKER SWITCH PCB ASS'Y (R)MCD728	1	SET	
23000047	SPECIAL SWITCH TC-V030A	2	PCS	SW801,802
35-MCD728-08A1	SWITCH PCB 35-MCD728-08A1	1	PCS	
08-MCD728-04A101	SPEAKER CASING PARTS ASS'Y(R MCD728/12	1	SET	
40000364	WOODEN BOX MCD728	1	PCS	
40000365	WOODEN BOX MCD728	1	PCS	
39-MCD728-04A100	MCD728 TOP COVER 2 ABS	1	PCS	
39-MCD728-05A101	MCD728 TWEETER DECORATIVE LOOP	1	PCS	
39-MCD728-06A101	MCD728 TWEETER DECORATIVE LOOP	2	PCS	
39-MCD728-07A101	MCD728 BACK PCB ABS	1	PCS	
39-MCD728-08A101	BOTTOM CHASSIS MCD728	1	PCS	
39-MCD728-16A100	MCD728 PLASTIC GRILLE ABS BLACK	1	PCS	
37-MCD728-02A100	MCD728 SPEAKER BRACKET METAL Φ140X3	1	PCS	
28000459	SPEAKER 2 1/2″ 8Ω40W	2	PCS	
28000460	SPEAKER 2 2″ 4Ω30W	1	PCS	
36000306	MCD700 GRILLE FIXER Φ6X6 GRAY	4	PCS	
37-MCD700-12A101	GRILLE FIX POS MCD700	4	PCS	
37-NE1300-03A100	NE-1300 CD DOOR BRACKET COUPLING SHAFT	1	PCS	
38000239	SCREW 2.6 X 5 PT NICKEL-PLATE	3	PCS	
38000187	SCREW 3 X 8 BA NICKEL-PLATE	12	PCS	
38000145	SCREW 3 X 14 FA BLACK	8	PCS	
38000321	NUT M8 NICKEL-PLATE	2	PCS	
38000187	SCREW 3 X 8 BA NICKEL-PLATE	2	PCS	
38000771	SCREW 4 X 16 BA NICKEL-PLATE	4	PCS	
38000774	SCREW M8 X 75 FM	1	PCS	

39-MCD728-09A100	MCD728 SPEAKER GEAR-BOX CABINET TOP ABS	1	PCS	
39-MCD728-10A100	MCD728 SPEAKER GEAR-BOX CABINET BOTTOM	1	PCS	
39-MCD728-11A100	MCD728 GEAR	1	PCS	
39-MCD728-12A100	MCD728 GEAR	1	PCS	
39-MCD728-03A100	MCD728 COVER PCB ABS	1	PCS	
39-MCD728-13A100	MCD728 GEAR	1	PCS	
39-MCD728-14A100	MCD728 GEAR	1	PCS	
39-MCD728-15A100	MCD728 GEAR	1	PCS	
39000431	SINGLE MOTOR WHEEL WHITE	1	PCS	
37-MCD728-03A100	COUPLING SHAFT MCD728	1	PCS	
36001073	LEATHER BELT Φ20X1.2	1	PCS	
37001164	STEEL BALL Φ4	2	PCS	
34000016	MOTOR RF-360C-13450	1	PCS	
38000030	SCREW 3 X 5 FM NICKEL-PLATE	2	PCS	
38000110	SCREW 3 X 10 PA BLACK	7	PCS	
38000156	SCREW 2.6 X 8 PWA	1	PCS	
38000447	SCREW 3 X 10 FA BLACK	1	PCS	
38000465	SCREW 2.6 X 5 FT NICKEL-PLATE	4	PCS	
38000494	SCREW 4 X 6 FM BLACK	1	PCS	
37001162	SPRING 10 Φ0.6	2	PCS	
09-MCD728-06A101	SPEAKER BOX ASS'Y (R)MCD728/12	1	SET	
07-MCD728-05A101	FREQUENCY DIVIDER ASS'Y(R)MCD728	1	SET	
13000503	CARBON FILM RESISTOR 10 1/4W J	1	PCS	R507
14000203	ELECTROLYTIC CAP. 100u 16V L-5 8X5	1	PCS	C504
14000203	ELECTROLYTIC CAP. 100u 16V L-5 8X5	1	PCS	C507
14000021	CERMIC CAP. 104P 50V K-5	2	PCS	C503,506
13000646	CHIP RESISTOR 10K 1/16W J(0603)	3	PCS	R508,514,515
13000661	CHIP RESISTOR 1K 1/16W J(0603)	2	PCS	R501,504
13000068	CHIP RESISTOR 1K 1/4W J (1206)	2	PCS	R502,506
13000667	CHIP RESISTOR 2.2K 1/16W J(0603)	2	PCS	R503,505
13000437	CARBON FILM RESISTOR 56K 1/8W J-52	1	PCS	
13000437	CARBON FILM RESISTOR 56K 1/8W J-52	1	PCS	
14000466	ELECTROLYTIC CAP. 2.2u 50V M 8X16	1	PCS	C508
13000393	CARBON FILM RESISTOR 470 1/8W J-52	1	PCS	R509
16000056	ZENER DIODE 3V 1/2W-52	1	PCS	DZ501
25002571	PIN CONNECTOR 555T/4P	1	PCS	CN502

35-MCD728-04A1	FREQUENCY DIVIDER PCB (L)35-MCD728-04A1	1	PCS	
37001161	METAL BRACKET 20X11X1 MCD728	2	PCS	
38000050	SCREW 3 X 5 BM NICKEL-PLATE	2	PCS	
07-MCD728-07A101	SPEAKER SWITCH PCB ASS'Y(L)MCD728	1	SET	
23000047	SPECIAL SWITCH TC-V030A	2	PCS	SW701,702
35-MCD728-07A1	SWITCH PCB 35-MCD728-07A1	1	PCS	
08-MCD728-03A101	SPEAKER CASING PARTS ASS'Y(L) MCD728/12	1	SET	
40000364	WOODEN BOX MCD728	1	PCS	
40000365	WOODEN BOX MCD728	1	PCS	
39-MCD728-04A100	MCD728 TOP COVER 2 ABS	1	PCS	
39-MCD728-05A101	MCD728 TWEETER DECORATIVE LOOP	1	PCS	
39-MCD728-06A101	MCD728 TWEETER DECORATIVE LOOP	2	PCS	
39-MCD728-07A101	MCD728 BACK PCB ABS	1	PCS	
39-MCD728-08A101	BOTTOM CHASSIS MCD728	1	PCS	
39-MCD728-16A100	MCD728 PLASTIC GRILLE ABS BLACK	1	PCS	
37-MCD728-02A100	MCD728 SPEAKER BRACKET METAL Φ140X3	1	PCS	
37-NE1300-03A100	NE-1300 CD DOOR BRACKET COUPLING SHAFT	1	PCS	
28000459	SPEAKER 2 1/2″ 8Ω40W	2	PCS	
28000460	SPEAKER 2 2″ 4Ω30W	1	PCS	
36000306	MCD700 GRILLE FIXER Φ6X6 GRAY	4	PCS	
37-MCD700-12A101	GRILLE FIX POS MCD700	4	PCS	
38000239	SCREW 2.6 X 5 PT NICKEL-PLATE	3	PCS	
38000187	SCREW 3 X 8 BA NICKEL-PLATE	12	PCS	
38000145	SCREW 3 X 14 FA BLACK	8	PCS	
38000321	NUT M8 NICKEL-PLATE	2	PCS	
38000187	SCREW 3 X 8 BA NICKEL-PLATE	2	PCS	
38000771	SCREW 4 X 16 BA NICKEL-PLATE	4	PCS	
38000774	SCREW M8 X 75 FM	1	PCS	
27000337	SPEAKER CORDS 1.5M 555T/4P	1	PCS	
41004889	SPEAKER BOX BACK LABEL(L)MCD728/12 40X27	1	PCS	
41002388	PE POLYBAG 20X10cm	1	PCS	
25000951	22WIRE 2P 170 RED BLACK	2	PCS	
36001087	RUBBER FOOT MCD700 ZJ-162 BLACK	4	PCS	
25002598	22WIRE 280+240 2.0/8PX1	1	PCS	
08-MCD728-05A101	SPEAKER GEAR-BOX ASS'Y MCD728	1	SET	
32000127	WORM PREFORMING NE-1300 ASS'Y SET	1	SET	